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THE COTTON TEXTILE INDUSTRY IN NEW ENGLAND AND
PROBLEMS CONFRONTING IT.

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INTRODUCTION

This study is undertaken to determine the causes of the decline in the cotton textile industry in New England, and to ascertain whether the industry can be restored to prosperity by proper corrective measures.

An examination of the reasons for the establishment and growth of the industry in this section of the country should reveal any fundamental changes which have occurred. If none has taken place, is it probable that the depression in the industry need be permanent? A knowledge of the difficulties confronting the industry would seem to indicate that it is possible to devise measures to revive it, or to institute changes adapting it to different conditions.

CHAPTER I

MANUFACTURING IN THE COLONIAL PERIOD

The preëminence of New England in manufacturing since a very early period in our history is due partly to the type of people who first settled the region, people of character, energy, and ambition, who were not daunted by the hardships and privations that they had to endure. The majority of these people were middle-class Englishmen, who had been accustomed to a comparatively high standard of living, and they endeavored to maintain that standard in America.¹

The first concern of the early settlers was, of course, to build homes, to clear land, and to raise enough food for their needs. As soon as the necessities of life were provided for, an attempt was made to secure greater comfort and improved economic conditions.

England's purpose in establishing colonies was to have them serve her in two ways: first, as sources

¹ Osgood, E. L., "A History of Industry," p. 324.

of raw materials not produced at home, and second, as markets for home manufactures. To this end, therefore, the Board of Trade and Plantations in England attempted to supervise and regulate colonial industries and commerce. In spite of restrictions, however, household manufacturing very soon developed due to the difficulties of securing goods from England. The slow transatlantic voyage, the high freight rates, and high commissions made the cost of imported goods too great for the colonists, and soon the small amount of coin in the country was exhausted and there seemed no way to pay the debts owed in England for imports.¹

In order to improve this situation the General Court of Massachusetts in 1640 "directed the magistrates to consider measures for furnishing wheels and instructing boys and girls how to spin flax, cotton, and wool."² This was probably the first legislation in America to aid the textile industry. In 1641 the General Assembly of Connecticut required each family to plant hemp or flax and save the seed in order to have a supply for cloth.³

¹ Coman, Katharine, "The Industrial History of the United States," pp. 63-65.

² Jennings, W. W., "A History of Economic Progress in the United States," p. 49.

³ Bagnall, W. R., "The Textile Industry of the United States," v. 1, p. 5

In 1656 the General Court of Massachusetts passed a further order in regard to spinning. Under this order, the selectmen of every town were required to appoint one spinner or more from each family, according to the circumstances of the families. Each spinner was obliged to spin a pound of linen, cotton, or woolen yarn each week for thirty weeks of the year, and a fine of 12d. was levied for each pound short of the required amount.¹ Prizes were sometimes offered for extra good work.²

Cloth was very necessary to every community, although much leather was used for clothing, and the bounties offered for cloth making, most of which were on woolen cloth, helped the growth of the textile industry in the colonies.³

The raw materials for cloth manufacturing were scarce and expensive. Wool was the most in demand. It could not be had from England because to protect the woolen industry in that country the English government forbade the exportation of wool or sheep, and most of the wool in the colonies came from Spain.

¹ Bagnall, W. R., "The Textile Industry of the United States," v. 1, p. 8.

² Jennings, W. W., "A History of Economic Progress in the United States," p. 50.

³ Walton, Perry, "The Story of Textiles," p. 128.

There were few sheep in America and as early as 1645 the Courts of both Massachusetts and Connecticut appealed to the towns to take measures to protect and increase the sheep.¹ Some cotton had been imported from Barbadoes and the West Indies since 1635,² but it could be used only when mixed with hemp, flax, or wool prior to the invention of the water frame in 1769 by Richard Arkwright.³ Cotton was higher priced than either worsted or linen, and while some household labor was occupied in spinning cotton, it was a comparatively small amount. Flax and hemp were raised in the colonies.

By 1643 the homespun industries were fairly well established.⁴ Most families had their own looms, there were itinerant weavers, and some custom weaving was carried on. The chief cloth made was linsey-woolsey, made with a linen warp and a wool filling.

Many settlers came from the part of England where spinning and weaving were familiar industries. Among them was a group of cloth manufacturers from Yorkshire

¹ Coman, Katharine, "The Industrial History of the United States," pp. 65-66.

² Walton, Perry, "The Story of the Textiles," p. 123.

³ Jennings, W. W., "A History of Economic Progress in the United States," p. 50.

⁴ Weeden, W. B., "Economic and Social History of New England," v. 1, p. 176.

who settled at Rowley, Massachusetts, and established the first fulling mill in the country.¹ Here they carried on the manufacture of "cloath and rugs of cotton wool and also sheeps' wool."²

Manufacturing in the colonies had many difficulties confronting it. Important among these difficulties were the great necessity of agriculture to supply food; scarcity of labor; lack of capital; limited markets in a community of self-sufficient households; lack of land transportation facilities; competition of English manufactures; and the opposition of the government of England to manufacturing in the colonies.³

Because of the difficulty of securing a food supply from the land, the colonists early turned to fishing. This business, of course, required the construction of boats. Later small ships were built and the important shipbuilding industry was started. Ships could be built cheaper in America than in Europe, and many were built and sold abroad. This industry brought much-needed capital to the colonies which made possible a

¹ Weedon, W. B., "Economic and Social History of New England," v. 1, pp. 176-177.

² Walton, Perry, "The Story of Textiles," p. 126.

³ Jennings, W. W., "A History of Economic Progress in the United States," p. 42.

flourishing commerce. Since most of the early settlements were along the coast, and were separated on land by miles of dense, Indian-infested forests traversed only by trails, it was natural that the colonists should carry on trade with each other by water. This commerce gradually expanded until the New England settlers were trading with the southern colonies, the West Indies and southern Europe, exchanging their fish, lumber, grain, and pork for tobacco, rum, sugar, molasses, cotton, salt, and money.

This capital and the expanding markets provided a brighter outlook for the manufacturing industries, but as soon as the colonists secured a profitable trade in any manufactured product the English government at once tried to stifle it by passing laws which favored English manufacturers and merchants, and which injured the business of the colonies.¹ Such measures were taken as the passage of the Woolen Act by Parliament in 1699, which forbade the export of woolen goods from the colonies or the movement of woolen cloth within the colonies with the intention of selling it. Of course, the effect of such legislation was to restrict the sale of

¹ Osgood, E. L., "A History of Industry," p. 3 .

manufactured goods to the local market, and greatly hindered the development of colonial manufactures. New England had built up a good trade in woolen cloth with the other colonies but this measure ruined it. Similar acts, aimed at other manufactures were passed at various times.¹ The colonial policy of England during the 17th and 18th century was based on the belief before mentioned, that the colonial industries must benefit British interests.²

In spite of the adverse legislation, by the close of the 17th century, with sufficient raw materials now available, enough cloth was made in New England to supply the home needs and have a surplus for export. As the industry developed, mills had been built to care for weaving, drying and fulling, but the carding and spinning were still carried on in the homes.³

On account of complaints of British merchants and manufacturers, the House of Commons instituted an investigation of conditions of manufacturing and commerce in the colonies that might be harmful to the manufactures and commerce of Great Britain. The Board of Trade charged

¹ Bogart, E. L., "Economic History of the United States," p. 100.

² Coman, Katharine, "The Industrial History of the United States," p. 79.

³ Ibid., p. 66.

with making the investigation, in its report in 1731, stated that in New England and Pennsylvania woolen and linen cloth was made for family use, and that in Massachusetts Bay small quantities of linen and cotton cloth were made for ordinary shirting.¹

As a protest against the Stamp Act of 1765, the merchants of Boston agreed to import no British goods until the Act was repealed; their example was followed by the merchants in New York and Philadelphia. One important result of this action was the effort made to develop colonial manufactures to take the place of the English goods, and considerable progress was made, especially in cloth making.² The fact that the Stamp Act was repealed in 1766 showed the effect of the non-importation agreements on British merchants.³

All through the colonial period the manufacturing was done by craftsmen, or by the domestic system under which capitalists gave out materials to be worked up in the homes. This system was particularly well suited to spinning yarn and weaving cloth.

¹ Bagnall, W. R., "The Textile Industry of the United States," pp. 14-15

² Coman, Katharine, "The Industrial History of the United States," pp. 96-97.

³ Ibid.. p. 98.

Manufacturing in the colonies still struggled against handicaps. Skilled labor was still scarce; craftsmen induced to come to America often worked at their trades only a few years then deserted them for the greater independence of the land owner; capital had increased, but most men of wealth preferred to invest their money in ships and trade rather than in manufacturing.¹

However, a serious effort was made to further the various manufactures. In 1775 The United Company of Philadelphia for promoting American manufactures of woolens, cotton, and linens was formed and gave encouragement to the manufacture of textiles.² In 1787 the General Assembly of Connecticut showed its interest in domestic manufactures by favorable consideration of two "memorials" asking for special legislation to assist in furthering textile industries within the state.³

An early stimulus to the manufacturing of cotton cloth in Massachusetts had been given by Mr. Hugh Orr

¹ Csgood, E. L., "A History of Industry," p. 333.

² Walton, Perry, "The Story of Textiles," p. 139.

³ Bagnall, W. R., "The Textile Industry of the United States," v. 1, p. 87.

when he invited the Barr brothers to come to this country and build at his shop in Bridgewater machinery for carding, roving, and spinning cotton. As a member of the Massachusetts Senate in 1786, Mr. Orr moved that certain men be appointed to investigate any newly invented machines in the state intended for use in manufacturing cotton or wool, and to report what measures the legislature ought to take to encourage their experiments.¹

The state granted £200 to enable the Barrs to complete their machine and when it was finished gave them six tickets in the state land lottery in which there were no blanks. Mr. Orr was allowed the use of the machinery.²

The first cotton factory in New England was established at Beverly, Massachusetts, in 1787 under the direction of Thomas Somers, an Englishman.³ It was incorporated February 3, 1789, under the title "Proprietors of the Beverly Cotton Manufactory."⁴ The

¹ Bagnall, W. R., "The Textile Industry of the United States," v. 1, p. 85.

² Bishop, J. L., "A History of American Manufactures from 1608 to 1860," v. 1, p. 398.

³ Bagnall, W. R., "The Textile Industry of the United States," v. 1, p. 89.

⁴ Ibid., v. 1, p. 94.

power for this mill was furnished by two strong horses in the basement.¹ The mill employed forty operatives,² and made the following goods: corduroy, a heavy material of cotton and linen used for men's and boy's clothing, velvets, thicketts, and jeans.³ It is claimed that after the mill was well established goods of a superior quality were made here, although an English committee reported in 1791 that the American cotton manufactures were coarse, of a poorer quality, and a higher price than the English goods produced at Manchester.⁴

This mill turned out from 6,000 to 10,000 yards of cloth a year,⁵ and it is interesting to note that this early mill had the permission of the legislature to trade-mark its goods. To each piece of goods was attached a label of lead bearing the seal of the corporation. Anyone marking cotton or linen goods not made in that mill with such a label was subject to a seizure of the goods, and, in addition, to a fine of three times their value. Also the goods were advertised for sale under the trade-

¹ "Some Industries of New England," issued by the State Street Trust Company, p. 11.

² Walton, Perry, "The Story of Textiles," p. 156.

³ Bagnall, W. R., "The Textile Industry of the United States," v. 1, p. 93.

⁴ Day, Clive, "A History of Commerce," pp. 402-403.

⁵ Walton, Perry, "The Story of Textiles," pp. 155-156.

mark in Beverly and Salem, then the chief cloth market of the colonies.¹

The early mills did not pay, and the net loss of the Beverly mill to September, 1791, was \$10,000, and the interest on the money. The states tried to encourage the early manufacturing industry, and in accordance with this policy the Massachusetts legislature gave the mill at Beverly \$500 to be paid from proceeds of lands of the Commonwealth, with the condition that they manufacture 50,000 yards of cotton or cotton and linen goods of a quality usually imported, within seven years from the date of the grant.² The mill ceased to operate shortly before 1807.³

During the colonial period great changes had taken place in the textile industry in England, and the machines which brought about the Industrial Revolution were being invented. In 1733 Kay invented the flying shuttle which so quickened the weaving process that one weaver could use the work of eight spinners; and the spinners could not produce yarn fast enough.⁴

¹ Weeden, W. B., "Economic and Social History of New England." v. 2, p. 215.

² Walton, Perry, "The Story of Textiles." p. 157.

³ Ibid., p. 155.

⁴ Jennings, W. W., "A History of Economic Progress in the United States," p. 40.

To relieve this situation, prizes were offered for inventions for swifter spinning, and in 1764 James Hargreaves brought out the spinning-jenny, a machine whereby one wheel turned eight spindles, and which was soon improved to spin sixteen threads at one time.¹

Richard Arkwright invented the water frame in 1769, and it became possible to spin stronger yarn that could be used for warp, which before this had been made of linen threads.²

After Samuel Crompton invented the mule in 1779 one spinner could spin two hundred threads at once, and the weavers were then unable to keep up with the spinners,³ until the power loom was invented by Edmund Cartwright in 1784.⁴

The great need now was for a larger supply of cotton. From 1785 to 1791 cotton was being introduced into the Southern states from West Indian seed, to meet the demand of the Northern manufacturers as well as for export,⁵ but it did not become very profitable

¹ West, W. M., "The American People," p. 336.

² Bagnall, W. R., "The Textile Industry of the United States," v. 1, p. 93.

³ West, W. M., "The American People," p. 336.

⁴ Jennings, W. W., "A History of Economic Progress in the United States," p. 40.

⁵ Weeden, W. B., "Economic and Social History of New England," v. 2, p. 851.

to raise cotton until after Whitney's invention of the cotton gin in 1793 because it was possible to separate the seeds from only about a pound of fibers a day.¹

At this time water power was not the only power used to run the mills. The steam engine, invented in 1769 by James Watt, had been introduced into factories to run the machinery by 1785.²

Such remarkable inventions, of course, gave England a great advantage in cotton manufacturing, and to maintain her advantage, she tried to prevent other countries from learning how these machines were constructed. Laws were enacted punishing by fine and imprisonment anyone who sent tools or machines for the manufacture of cotton and linen out of the country.³

However, in spite of precaution, a knowledge of the machines reached America. Machines were smuggled out of the country to France in parts, labelled as other goods, and later shipped to America. Drawings were made and secretly brought to this country, and operatives who came here were able to reproduce the machines from memory. Shortly after 1800 American

¹ Day, Clive, "A History of Commerce," p. 533.

² Jennings, W. W., "A History of Economic Progress in the United States," p. 40.

³ Ibid., p. 165.

textile manufacturers were well supplied with English machines.¹

Some carding machines and spinning jennies were the first English machines to be put in operation here, but Arkwright's water frame did not become known until Samuel Slater built his machines at Pawtucket, R. I., in 1790, and made it possible to spin yarn by water power.² This was the first successful manufacture of cotton in the United States,³ and Slater established the industry on a firm footing and made money.⁴

Before the establishment of the mill at Pawtucket, cotton cloth made by the wheel and loom usually cost 50¢ a yard and never less than 40¢, but a few years after this mill was in operation it sold for 9¢ or 10¢ a yard. Before the Industrial Revolution cotton had been an article of luxury.⁵

The procedure in the early mills in the Rhode Island region followed Slater's example and was as follows: the raw cotton was put out to poor families who whipped it to clean it, working for from 4¢ to

¹ Walton, Perry, "The Story of Textiles," p. 142.

² Ibid., p. 141.

³ Weedon, W. B., "Economic and Social History of New England," v. 2, p. 849.

⁴ Walton, Perry, "The Story of Textiles," p. 135.

⁵ Jennings, W. W., "A History of Economic Progress in the United States," p. 603.

6¢ a pound according to how much dirt it contained; it was spun into yarn in the mill, and the yarn was woven into cloth in private families. The bleaching was done by stretching yarn upon stakes driven into the ground, and cloth was stretched on the ground and women sprinkled it with waterpots.¹ The first cloth manufactured by water power in the country was at the falls of Parker River in Newburyport, Mass., in 1794.²

The first cotton sewing thread was used in Pawtucket in 1792 by the Wilkinson women who twisted the yarn made in the mill on their own spinning wheels, and their brothers soon began the manufacture of it. Until that time sewing thread had been made of linen.³

The invention of machine-made cards has been credited with being responsible for the greatest advancement of the textile industry next after the great inventions of textile machinery which took place in England in the latter part of the 18th century. These machine-made cards were invented by Amos Whittemore in

¹ Walton, Perry, "The Story of Textiles," pp. 174-176.

² "Some Industries of New England," issued by the State Street Trust Company, p. 1

³ Weeden, W. B., "Economic and Social History of New England," v. 2, p. 912.

1797 and were later introduced into England.¹

When it was proved that American cotton manufactures could successfully compete with English cotton in the United States market many factories grew up in Rhode Island and Massachusetts.² The excellent water power found in New England, together with the difficulty of earning a meagre living from farming, and the large number of settlers familiar with the textile industry in England made possible a rapid growth in cotton mills.

Until the Revolutionary War agriculture, fishing, and commerce were the most profitable industries in the country. During the war, with its consequent withdrawal of British trade, some manufactures sprang up, but with the return of peace, large quantities of foreign goods appeared again in the American market at very low prices to regain the lost trade. American manufactures were, of course, injured because many people desired the articles of British manufacture which were superior to those of American make, and the British merchants were able to undersell our own

¹ Weeden, W. B., "Economic and Social History of New England," v. 2, p. 853.

² Jennings, W. W., "A History of Economic Progress in the United States," p. 159.

manufactures. The large amount of buying and the limited supply of money precipitated the crisis of 1783, making more serious the plight of American manufactures. However, as soon as the financial situation improved, about 1786, manufacturing began to develop again, and cotton and woolen mills appeared in New England and Pennsylvania.¹

¹ Jennings, W. W., "A History of Economic Progress in the United States," pp. 151-152.

CHAPTER II

DEVELOPMENT OF THE INDUSTRY DURING THE NINETEENTH CENTURY

The cotton industry received added impetus in the early 19th century. In 1803 Napoleon resumed war with England, and from 1803 to 1812 American shipping was the object of prey of both France and England. To prevent the seizures of American ships President Jefferson persuaded Congress to pass the Embargo Act of 1807, which forbade ships to leave port. With our commerce ruined by the Embargo, the British Orders in Council, and the Decrees of Napoleon, capital which heretofore had been absorbed by shipping interests, was now invested in manufacturing.¹ Since our commerce with Europe was cut off, it became necessary to manufacture our own goods or go without.

Many cotton factories were established in New

¹ Bagnall, W. R. "The Textile Industry of the United States," v. 1, p. 488.

England during this period, partly because of the excellent water power sites, and partly because much of the capital freed from commerce belonged in New England. This region also had a good labor supply, a good population for markets, and a climate suitable for cotton manufacturing.

The capital made possible the introduction of machinery into the new factories on a much larger scale. Better spinning machines and power looms were introduced, and roller printing of cotton took the place of hand printing.¹ This period of prosperity in the cotton industry continued until after the close of the wars in 1815.²

Many of our large mills of today were established at this time. The Boston Manufacturing Company was established at Waltham in 1813 by Francis Cabot Lowell,³ and was the first mill in the world in which all the processes for making the finished product from the raw material were carried on in one plant.⁴

¹ Osgood, E. L., "A History of Industry," pp. 373-374.

² Bagnall, W. K., "The Textile Industry of the United States," v. 1, p. 541.

³ "The Boston Manufacturing Company," *Industry*, v. 23, no. 15, June 8, 1929, p. 22.

⁴ Day, Clive, "A History of Commerce," p. 508.

In this factory also, the organization was so perfected that Lowell's method is still considered the best for operating a textile mill and selling its product.¹

During the period of depression in the cotton industry, 1817-1820, this mill paid 12 per cent dividend every year.² Another fact worth mention in regard to the Waltham mill is that wages were paid in money rather than in yarn, as was the practice in many mills.³

Another mill of interest that had its beginning at this time is the great Amoskeag Mill at Manchester, New Hampshire. It has grown from the small wooden building in which Benjamin Prichard began manufacturing cotton yarn in 1805 into the huge plant which now occupies nearly two miles of the east bank of the Merrimac River.

The description of the method by which the Amoskeag shipped its product to Boston gives an interesting side-light on transportation in the early years of the 19th century. The goods were shipped by boats from Manchester to Boston via the Middlesex Canal or by heavy, canvas-covered wagons drawn by oxen, and a stage coach

¹ Walton, Perry, "The Story of Textiles," p. 198.

² Ibid., p. 200.

³ Ibid., p. 196.

line served passengers. In the Amoskeag the operatives were paid in yarn. This mill was nearly ruined by the war; the mortgage was foreclosed and it passed into other hands.¹

Cotton manufacturing in Fall River, the leading center of the industry in New England today, was begun in 1811.²

Between 1807 and 1815 there was scarcely a stream within a radius of forty miles of Providence, R. I. with sufficient water power to operate a mill, that was not occupied by a cotton or woolen mill before 1815.³

The manufacture of so much cotton cloth lead to the establishing of finishing plants. The first one in the country was the Middlesex Bleach, Dye and Print Works built in 1801 in that part of Charlestown which is now Somerville.⁴ In 1812 one was established at Webster,⁵ and in 1820 one in Waltham.⁶

¹ "Some Industries of New England," issued by the State Street Trust Company, pp. 3-6.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 194.

³ Bagnall, W. R., "The Textile Industry of the United States," p. 541.

⁴ "The Middlesex Bleach, Dye, and Print Works," Industry v. 23, no. 15, June 8, 1929, p. 16.

⁵ "Webster," Industry, v. 23, no. 23, Aug. 3, 1929, p. 17.

⁶ "The Waltham Bleachery," Industry, v. 23, no. 15, June 8, 1929, p. 21.

Following is a brief summary showing the growth made in the cotton textile industry in New England from its beginning to 1815.

Growth of Cotton Industry Shown by Number of Spindles

Year	Number of Spindles
1787	860 ¹
1805	4500 ²
1808	8000 ³
1809	31000 ⁴
1810	87000 ⁵
1815	134214 ⁶

The great increase shown in the later years was due to the embargo.

Growth of the Cotton Industry Shown by Cotton Consumed

Year	Number of Bales
1800	500
1805	1000
1810	10000
1810	90000 ⁷

¹ Walton, Perry, "The Story of Textiles," p. 249.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 5.

³ Osgood, E. L. "A History of Industry," p. 674.

⁴ Walton, Perry, "The Story of Textiles," p. 179.

⁵ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 5.

⁶ Walton, Perry, "The Story of Textiles," p. 232.

⁷ Day, Clive, "A History of Commerce," p. 508.

Growth of the Cotton Industry Shown by Number of Plants

Year	Number of Plants
1803	4 ¹
1809	87 ²
1815	170 ³

The 170 mills were located as follows:

Rhode Island 99 mills operating 75,678 spindles

Massachusetts 57 " " 45,650 "

Connecticut 14 " " 12,886 " 4

Up to this time \$40,000,000 was invested in the industry, and 100,000 workers were employed by it.⁵

By 1815 our manufactures faced a period of depression due to the quantity of foreign goods which had accumulated during the years of war, and which were thrown on the American market at low prices with which our manufacturers could not compete. It was feared that our manufactures would be ruined and that we would be forced to depend on foreign sources for our cotton

¹ Moore, J. R. H., "Industrial History of the American People," p. 402.

² Walton, Perry, "The Story of Textiles," p. 179.

³ Ibid., p. 232

⁴ Ibid., p. 232.

⁵ Jennings, W. W., "A History of Economic Progress in the United States," p. 164.

and woolen goods.¹

To avert such an undesirable situation the tariff of 1816 was passed as a protective measure. This tariff placed a duty of 25¢ a yard on cotton and woolen goods.² The tariff did aid the textile industries somewhat, but foreign textiles were not entirely excluded by it and the duty was later increased.

About this time, however, the introduction of the power-loom made it possible to compete more successfully with foreign manufactures.³ The rapid development of cotton machinery in the country helped greatly in the profitable operation of the cotton industry,⁴ and together with the cheaper raw material due to lower transportation charges enabled American manufacturers to produce goods that could be sold as cheaply as English goods.⁵

After the protective tariff was enacted a great expansion in the industry took place only to be checked

¹ Bagnall, W. R., "The Textile Industry of the United States," p. 541.

² Coman, Katharine, "The Industrial History of the United States," p. 192.

³ Bagnall, W. R., "The Textile Industry of the United States," p. 542.

⁴ Jennings, W. W., "A History of Economic Progress in the United States," p. 159.

⁵ Coman, Katharine, "The Industrial History of the United States," p. 195.

by the crisis of 1819.¹ The check was temporary, however, and the industry continued to expand. By this time, the 170 mills with 134,214 spindles of 1815 had increased to 400 mills with about 280,000 spindles.² The cotton textile industry was definitely established by 1832.³

Jenckes ring spindle invented in 1830 greatly stimulated the cotton industry,⁴ as did Howe's sewing machine, invented in 1846, by greatly increasing the demand for cotton cloth.⁵ Between 1829 and 1834 the efficiency of some kinds of cotton machinery was doubled.⁶

About 1840 the smaller plants began to disappear, and the number of establishments did not greatly increase. This consolidation continued in New England until after 1880.⁷

The Naumkeag Steam Cotton Company of Salem, Mass.

¹ Coman, Katharine, "The Industrial History of the United States," pp. 200-201.

² Jennings, W. W., "A History of Economic Progress in the United States," p. 260.

³ "Some Industries of New England," issued by the State Trust Company, p. 1.

⁴ Jarvis, Clive, "The Story of Pequot," p. 5.

⁵ Jennings, W. W., "A History of Economic Progress in the United States," p. 260.

⁶ Moore, J. R. H., "The Industrial History of the American People," p. 415.

⁷ Ibid., p. 327.

was the first mill in New England to use steam for power. This mill began manufacturing about 1845.¹ Hitherto, New England mills had been operated by water power, and it had also been thought necessary to locate them near falls and rapids to secure the necessary humidity. In the Naumkeag Mills it was expected that the rise and fall of the tide would provide for the humidity. The change from the usual location of mills at this period came about because desirable water power sites were now scarce, and advantages could be secured in lower costs of transportation of the raw material if the mill were built on the water front.² Another factor influencing the location was the amount of Salem capital released when shipping declined after the War of 1812 which was invested in the mill.³

This mill was destroyed in the Salem fire in 1914, and the mill that was rebuilt on the same site is "perhaps the best cotton mill in the country."⁴

Steam was first used in Fall River at about the

¹ Jarvis, Clive, "The Story of Pequot," p. 28.

² "Some Industries of New England," issued by the State Trust Company, p. 32.

³ Ibid., p. 31.

⁴ Ibid., p. 33.

same time that it was used in Salem, 1845.¹

The Wamsutta Mill, the first mill to be built in New Bedford, Massachusetts, which is the leading city in the manufacture of fine goods, was erected in 1846 while the whaling industry still flourished, and it proved rather difficult to secure the necessary capital.²

Among other important mills that were founded at about this time are the Pacific Mills at Lawrence, Massachusetts. The first goods were produced in these mills in 1854.³

Between 1838 and 1860 the number of spindles doubled, and the amount of raw cotton used trebled,⁴ but this prosperity in the industry was again checked by a panic in 1857.⁵

The following table gives a summary of the growth of the industry in this period. The figures are for the country at large, but New England was the principal seat of the industry and had about 52 per cent of the

¹ Walton, Perry, "The Story of Textiles," p. 228.

² Pease, Zephaniah, "History of New Bedford," v. 1, p. 210.

³ "Some Industries of New England," issued by the State Street Trust Company, p. 35.

⁴ Coman, Katharine, "The Industrial History of the United States," p. 259.

⁵ "Some Industries of New England," issued by the State Street Trust Company, p. 35.

establishments, and 75 per cent of the spindles and looms.¹

Cotton Manufactures 1820-1860

Year	Number of Establishments	Number of Spindles	Pounds of Cotton Used	Value of Product
1820		220,000		
1825		800,000		
1830	795	1,200,000	77,800,000	\$ 32,000,000
1840	1,240	2,300,000	113,100,000	46,400,000
1850	1,094	3,600,000	276,100,000	61,700,000
1860	1,091	5,200,000	422,700,000	115,700,000 ²

For New England in 1860 the figures are:

Establishments	Spindles	Cotton Used	Value of Product
570	3,800,000	283,700,000	\$79,400,000 ³

The New England mills averaged about 6,700 spindles per mill, nearly twice the average in other parts of the country. Massachusetts had 48 per cent of the spindles, and Rhode Island had 30 per cent.⁴ The important cotton manufacturing cities were Providence, Fall River, Lowell, and Manchester.

¹ Annual Report of Mr. O. L. Stone, Gen. Manager of The Associated Industries of Massachusetts, 1928, p. 78.

² Copeland, M. T. "The Cotton Manufacturing Industry of the United States," pp. 5-6.

³ Ibid., p. 8.

⁴ Ibid., p. 8.

Until 1860 practically all of our product was coarse or medium cotton goods, and was chiefly consumed at home. Our fine goods were imported because we had neither labor nor machinery suited to making fine goods.¹

The Civil War caused a shortage of labor and at the same time an extra demand for goods for the army. This situation, and a high tariff lead to high prices, and production was greatly stimulated. New machines were invented which increased production and displaced hand labor and brought about a period of greater productivity and prosperity, but after the war the industry suffered depression for several years because prices were so high that the market was greatly limited.²

The whaling industry reached its height about 1857, and from that time gradually declined, and much of the capital thus released went into the building of New Bedford mills.³ The second New Bedford mill, the Potomska, was built in 1871, and by 1881 the boom in

¹ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 14.

² Bader, Louis, "World Developments in the Cotton Industry," p. 4.

³ Pease, Zephaniah, "History of New Bedford," v. 1, p. 212.

mill building had started.¹ The cool, moist climate and even temperature are especially favorable for the manufacture of fine yarns. Of all the New England cities New Bedford has advanced the most rapidly in the last thirty years,² and is today the leading city in the manufacture of fine goods.

Other important cotton manufacturing cities are: Fall River, Lowell, Lawrence, Fitchburg, and Taunton in Massachusetts; Providence, Pawtucket, Woonsocket, and Central Falls in Rhode Island; Lewiston, Augusta, and Biddiford in Maine; Manchester, Nashua, Laconia, in New Hampshire; and Norwich, Connecticut.³

Although cotton manufacturing is such an important industry, and New England's cotton goods make up about 40 per cent of the total production of the country,⁴ and furnish her largest single line of manufactures, yet they contribute only 3 1/2 per cent of the total New England income from manufacturing.⁵

¹ Pease, Zephaniah, "History of New Bedford," v. 1, p. 212.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 30.

³ "Markets of the World," issued by the First National Bank of Boston, pp. 2-7.

⁴ O'Shea, P. T., "New England Faces the Facts," The Magazine of Business, v. 55, no. 6, June, 1929, p. 660.

⁵ Artman, C. E., "New England Manufactures in the Nation's Commerce," Trade Information Bulletin No. 582, p. 9.

CHAPTER III

TARIFF LEGISLATION AFFECTING THE COTTON TEXTILE INDUSTRY

Our first national tariff of 1789 was chiefly for revenue, but at the same time, it aided those manufactures already growing up in the country.¹ A duty of 8 1/2 per cent was levied on cotton cloth,² and a duty of three cents a pound was placed on raw cotton, the demand for which was increasing because of the inventions in cotton manufacturing machinery.³

In 1790 the rate on calico and many plain cotton fabrics was increased to 12 1/2 per cent.⁴

Alexander Hamilton in his "Report on Manufactures" in 1791 made an able appeal for a protective tariff. He called attention to the difficulties confronting American manufacturers in the scarcity of labor and

¹ Jennings, W. W., "A History of Economic Progress in the United States," p. 44

² Tarbell, I. M., "The Tariff of Our Times," p. 1

³ Day, Clive, "A History of Commerce," p. 532.

⁴ Jennings, W. W., "A History of Economic Progress in the United States," p. 158.

and capital, and the resulting high wages and interest rates that they must pay, placing them at a disadvantage with their foreign competitors.

He believed that these disadvantages would be overcome and that American manufactures would prosper with aid from the government in the form of a protective tariff. High wages were attracting laborers from Europe and the labor supply would become adequate; merchants whose foreign commerce was declining might build up a new trade in exchanging the southern raw materials for northern manufactures; our farmers and lumbermen would have a more dependable market for their products in the growing manufacturing towns; domestic competition would bring prices to a lower level than foreign competition could meet with the heavy freight charges that they had to pay. Thus, farmers, manufacturers, consumers, and the country as a whole would benefit.¹

In his report Hamilton referred to the cotton manufacturing establishments at Beverly, Massachusetts, at Providence, Rhode Island, and smaller plants in Connecticut. At this time, these mills were turning

¹ Coman, Katharine, "The Industrial History of the United States," pp. 146-148.

out large quantities of corduroys, velverets, fustians, jeans, and coarse cloths, including shirtings. Household industries also supplied quantities of these materials, and in addition, linsey-woolsey, and woollen and linen fabrics.¹

Duties were raised in the tariffs of 1792 and 1794 in accordance with Hamilton's ideas, and in 1795 the method of valuation was changed from the value in America to the value at place of export.²

The tariff of 1804 raised the rates about 5 per cent, and that of 1812 nearly 10 per cent, chiefly for revenue.³

The first strictly protective tariff that is, one which aims to raise costs of foreign articles to aid domestic manufacturers, was in 1816.⁴

At the close of the European wars such quantities of foreign goods flooded the country that the domestic manufactures were nearly ruined, and real protection was asked to make a high-priced home market until the industries were established. This was granted, and a

¹ Jennings, W. W., "A History of Economic Progress in the United States," p. 154.

² Ibid., p. 158.

³ Ibid., p. 158.

⁴ Ibid., p. 277.

duty of 25 per cent was levied until June 30, 1819, and 20 per cent after that on cotton and woolen goods because they were most seriously threatened.¹ The lower-priced cloths were heavily taxed because in fixing the valuation it was considered that the cost was at least 25¢ a square yard.²

Regardless of the fact that the cotton industry and much of the woolen industry were located in New England, this section of the country opposed the tariff because of the great amount of capital invested in shipping. The tariff it was feared, would hurt the carrying trade.³

Many new mills which did not pay were started under the influence of the protective measure, and this condition lead to more protection, and resulted in the tariff of 1824 with rates averaging about 33 per cent.⁴

The tariff of 1828 was planned by men opposed to protection and was purposely made so objectionable that it would not be passed. However, it did pass

¹ West, W. M., "The American People," p. 327.

² Jennings, W. W., "A History of Economic Progress in the United States," p. 278.

³ Moore, J. R. H., "Industrial History of the American People," p. 406.

⁴ West, W. M., "The American People," p. 320.

and under it rates were about 49 per cent.¹

In 1832 duties were reduced, and in 1833 the tariff law provided that they should be lowered over a period of ten years until they reached the level of 1816.²

The tariff of 1842 averaged 33 per cent,³ and by 1857 duties were reduced to an average of 20 per cent, the lowest that they had been since 1816.⁴

During the period of the Civil War tariffs were high for revenue. This fact, together with the high wages that prevailed, and the invention of labor-saving machines greatly stimulated the textile industry.

The tariff of 1865 introduced the system of compound duties on cotton manufactures, that is, ad valorem duties were added to the specific duties.⁵

These high duties were followed in 1872 by a reduction of 10 per cent on goods manufactured from cotton, wool, iron, paper, glass, and leather.⁶

¹ Moore, J. R. H., "Industrial History of the American People," p. 327.

² Ibid., p. 327.

³ Ibid., p. 419.

⁴ Tarbell, I. M., "The Tariff of Our Times," p. 2

⁵ Jennings, W. W., "A History of Economic Progress in the United States," p. 454.

⁶ Tarbell, I. M., "The Tariff of Our Times," p. 78.

In 1883 the rate on cotton goods was increased to 46 per cent;¹ in 1890 it was 40 per cent on yarn and 50 per cent on cloth; in 1894 it was 45 per cent;² and in 1897 it was raised to 57 per cent.³

Efforts were made to reduce the tariff rates, but the cotton and woolen interests of New England, New York, and Pennsylvania were strong enough to prevent lowering the tariff.⁴

The tariff of 1909 introduced four classifications in fixing duties and made it more difficult to classify goods in addition to raising duties on many kinds of cotton cloth.⁵ On coarse yarns the duties were reduced.⁶ At this time, duties amounted to from 30 to 50 per cent of the value of the goods.⁷

Under Democratic influence in 1913 rates were reduced from 49 per cent to 27 per cent.⁸

In 1922 the duties on cotton were not higher than

¹ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 235.

² Ibid., p. 194.

³ West, W. M., "The American People," p. 517.

⁴ Tarbell, I. M., "The Tariff of Our Times," p. 324.

⁵ Ibid., p. 318.

⁶ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 238.

⁷ Evans, S. M., "Schedule 1; The Cotton Tariff," World's Work, v. 20, no. 4, August, 1910, p. 13278.

⁸ West, W. M., "The American People," p. 617.

in 1913, and were much lower than they were in 1909.¹

Under our present tariff enacted in 1930, the rates on cotton goods average 13 per cent of coarse goods, and 44 1/2 per cent on fine goods.²

Undoubtedly the tariff affects the cotton textile industry, but it is not sufficient to bring prosperity to it if conditions within the industry are not sound. Moreover, in the period between 1850 and 1860 when the tariff was low the cotton textile industry was very prosperous.³

¹ Jennings, W. W., "A History of Economic Progress in the United States," p. 629.

² "The Tariff Act of 1930," pp. 58-60.

³ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 15.

CHAPTER IV
THE FACTORY SYSTEM: HOURS, WAGES, AND CONDITIONS
OF LABOR

The machinery that took the place of the wheel and loom was expensive, and workmen could not own it themselves. The result was that wealthy men built and equipped the mills and hired operatives to work for them.

The factory system with its extensive use of machinery, and its strict organization of labor was first permanently established in the United States in 1790 at Pawtucket, Rhode Island.¹

The new system completely changed the manner of living of factory workers, most of whom previously had lived on farms. The hours were from dawn until dark which meant from thirteen to fifteen hours a day much of the year.² Formerly, as farm help the

¹ Day, Clive, "A History of Commerce," p. 481.

² "Some Industries of New England," issued by the State Street Trust Company, p. 22

workers had been accustomed to long hours, but as mill operatives the indoor work in the factory with bad air, poor light, noise and vibration of machinery, and the monotony of the work was much more wearing.

Factory towns grew up quickly with no regard paid to healthful conditions. There was no fit water supply, no sewerage system, and no garbage collection.¹

The first mill operatives were native-born Americans, often friends or acquaintances of the owner. These people went into the mills in order to earn money enough to enable them to undertake some more desirable work. Such temporary workers made for great labor turnover, and conditions were kept as favorable as possible to attract help. Unhealthful conditions and abusive treatment were avoided.²

By 1860 the small mills where the owner worked with his acquaintances were disappearing and the capitalist class became distinct from the wage-earning class. The number of immigrants displacing native

¹ West, W. M., "The American People," p. 338.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 12.

labor helped to increase the distinction.¹

Immigrant labor had been used in our mills to some extent before 1836.² English, Scotch, and Irish were the first to invade the mills. Cheaper labor followed: the French Canadians drove out natives and the English, and they in turn, after about 1885, were displaced by Russians, Poles, Bohemians, and people from the south of Europe. These people had lower standards of living, and living conditions in the mill towns became less favorable. Such cheap immigrant labor made possible the expansion of the industry, but without it higher wages and better living conditions might have developed.

Many from this class of operatives want to save money enough to go home to live, and they are not interested in improving conditions in the industry. They are largely illiterate, and live segregated according to race in immigrant quarters. Their children go to school, to be sure, until they are fourteen years old, but few American children are found in such neighborhoods, and they mingle with other children

¹ Osgood, E. L., "A History of Industry," p. 389.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States." p. 13.

whose home surroundings are similar to their own. As soon as they are old enough to be allowed to go to work they leave school and go into the mills.

There is little family life as we understand it, with the family dependent on the husband for support. All members of the family work in the mills except young children, and possibly the mother or an older sister who looks after the younger ones.

Often a group of single men live together with a man or a man and his wife to take charge. In order to lessen expenses, as many as possible crowd into one building giving no attention to healthful conditions.¹

The development of automatic machinery which requires less skill on the part of the operative now enables cheap immigrant labor to carry on work which formerly required several years of experience. This kind of machinery also permits one operative to tend more machines. Tending a larger number of machines is more difficult and tiring, but it enables an operative to earn higher wages. For example, take the Northrop loom which came into use about 1894. One

¹ Lauck, W. J., "The Cotton Mill Operatives in New England," *Atlantic Monthly*, v. 109, no. 5, May, 1912, pp. 709-713.

weaver can tend from fourteen to thirty Northrop looms in comparison with from six to eight ordinary looms.¹

Marked changes have taken place in recent years years in the machines used, and the number of operatives required to tend them, as is illustrated in the following: Comparison of the Personnel in the Weave Shed of a New England Mill 1910-1925.

Item	1910	1925
Average number of workers	21 section hands	17 loom fixers
	17 filling hands	1 spare loom fixer
	3 scrubbers	2 loom fixer learners
	302 weavers	7 warp changers
		1 warp placer
		7 loom cleaners
		1 lease inspector
		1 lease collector and oiler
		7 cloth men
		2 supply room men
		1 motor man
		3 bobbin men
		1 yarn man
		5 blowers and sweepers
Total	343	

¹ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 84.

Item	1910	1925
Average number of workers		5 spare hands 47 weaver helpers <u>66</u> weavers
Total	343	174
		1

Such Americans and older immigrants as are still in the mills occupy the better positions which require skill and training, such as overseers and mechanics.²

A list of the different nationalities to be found in Fall River in 1902 shows the situation in regard to the population of a typical New England mill town. The population of 105,000 is divided as follows:

Americans	15,000
English	15,000
Irish	25,000
French Canadians	30,000
Portuguese	5,000
Armenians	15,000

¹ Monthly Labor Review, v. 23, no. 4, October, 1926, p. 20.

² Lauck, W. J., "The Cotton Mill Operatives of New England," The Atlantic Monthly, v. 109, no. 5, May, 1912, p. 712.

It is not strange that some mills find it necessary to post notices in four languages. The cotton industry takes a large proportion of the newly arrived immigrants.¹

Since it is a fact that most of these foreign-born mill operatives take no interest in political affairs, or in learning American ways of living, it is to the interest of the higher classes in the community that every effort should be made to Americanize them.

The cotton industry is one in which large numbers of female workers are found. In 1860 about one fifth of the workers in industry in the country were women, but in the cotton industry in New England two thirds were females.² The large proportion of women and children employed in the mills is reflected in the wages. The census of manufactures for 1914 showed earnings in the cotton mills to be 33 per cent less than the average for workers in twenty-three leading industries.³

¹ Young, T. M., "The American Cotton Industry," p. 12.

² Jennings, W. W., "A History of Economic Progress in the United States," p. 306.

³ "Mill Owners' Report Against Short Day," Survey, v. 39, no. 25, Mar. 23, 1918, p. 689.

The majority of workers in the cotton goods industry are paid piece rates, and these rates are not the same in all mills. The rates for the manufacture of fine goods are higher. The use of improved machinery has generally reduced the piece rate, because it is possible to increase output so greatly.¹

Under the old hand methods of manufacture 30,000,000 people² would be required to turn out the 1,500 miles of cotton cloth made daily in Fall River³ by its 31,489 operatives.⁴

In 1928 the average full-time weekly earnings for males ranged from \$14.58 to \$24.52, and for females from \$11.88 to \$20.31.⁵

The average full-time weekly earnings increased 191.8 per cent between 1913 and 1920, and decreased 30.5 per cent between 1921 and 1928.⁶

The following table shows the wages for different kinds of work within the industry.

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- ¹ Copeland, M. T. "The Cotton Manufacturing Industry of the United States," p. 129.
² Walton, Perry, "The Story of Textiles," p. 250.
³ Clark, V. S., "History of Manufacturing in the United States." v. 3, p. 172.
⁴ Census of Manufactures, 1929: Statistics for Industries, States, and Cities, p. 820.
⁵ Bulletin of the United States Bureau of Labor Statistics, No. 492, p. 8.
⁶ Monthly Labor Review. v. 27, no. 4, October, 1928, pp. 89-90.

Average weekly earnings for 1928 in Massachusetts mills for occupations which are approximately in the order of manufacture:

Occupation	Male		Female	
	Full-time	Actual	Full-time	Actual
Picker tenders	18.91	16.25		
Card tenders and strippers	20.39	18.15		
Card grinders	24.16	23.35		
Drawing frame tenders	17.87	15.83	15.55	12.63
Slubber tenders	22.90	20.09	18.30	14.52
Speeder tenders	24.29	21.48	17.57	14.50
Spinners, mule	29.28	23.15		
Spinners, frame	24.44	17.38	16.80	13.93
Doffers	19.59	16.91	18.10	14.79
Spooler tenders			14.78	12.66
Creelers or tiers-in			13.56	11.96
Warper tenders			17.04	14.70
Beamer tenders	26.30	23.52	24.88	23.35
Slasher tenders	24.88	23.35		
Drawers-in, hand			20.02	16.25
Drawing-in machine tenders	25.99	15.53		
Warp-tying machine tenders	25.17	21.26		
Loom fixers	29.24	27.53		

Occupation	Male		Female	
	Full-time	Actual	Full-time	Actual
Weavers	21.55	18.24	19.44	16.50
Trimmers or inspectors	25.54	24.92	12.71	11.05
Other employees	18.85	17.17	14.29	11.98 ¹

Average Weekly Wages in the Cotton-goods Industry, 1930

State	Occupation				
	Spinning, Frame		Weavers		Loom Fixers
	Male	Female	Male	Female	Male
Me.		16.76	24.11	21.99	28.94
N. H.	22.04	20.86	24.89	26.42	32.98
Mass.	23.98	16.42	22.08	19.92	28.60
R. I.		18.11	25.09	23.57	30.27
Conn.	17.61	16.44	21.92	20.70	29.41 ²

According to the 1925 census of manufactures, the proportion of the total value added by manufacture represented by wages was 62 per cent in the New England States against 50 per cent in the important cotton manufacturing states of the South.³

¹ Bulletin of the United States Bureau of Labor Statistics No. 492, pp. 25-32

² Monthly Labor Review, v. 31, no. 5, November, 1930, p. 169

³ Young, H. H., "Cotton Manufacturing in New England," p. 21.

The labor laws of the present day in New England are beneficial to employees, especially in Massachusetts and Rhode Island.¹ In reference to child labor legislation Massachusetts stands first. No child under fourteen can leave school and go to work, and factory inspectors enforce the law in manufacturing establishments. Children fourteen years old who have completed sixth grade work may go to work, but they must attend continuation school one day a week until they are sixteen. No minors under eighteen can be employed on night work.²

Rhode Island, Maine, and Connecticut all prohibit child labor under fourteen, but the laws are not so strictly enforced as in Massachusetts.³ New Hampshire prohibits child labor under fourteen, except when school is not in session, then the age limit is lowered to twelve. If a child is unable to read or write English he cannot go to work until he is sixteen.⁴

Few children are employed in the mills making fine cotton goods because their labor is unprofitable.⁵

¹Walton, Perry, "The Story of Textiles," p. 251.

²"Big Boon to Massachusetts Textiles," The Boston Post, v. 529, no. 14, Oct. 16, 1930, p. 1.

³Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 116.

⁴Ibid., p. 117.

⁵Ibid., p. 117.

The legal hours of labor for women in the New England States are:

Massachusetts	48-hour week		
New Hampshire	54	"	"
Maine	54	"	"
Rhode Island	54	"	"
Connecticut	55	"	"

There is such a large number of women in the industry that the hours of labor for women determine the hours of labor for the industry.¹

Night work has been prohibited for women in Massachusetts and New Hampshire, and for girls under sixteen in the other New England States.² Now, however, delegates to the Cotton Textile Institute of New York have agreed to eliminate night work for women and minors under eighteen, beginning March 1, 1931. This action affects not only New England, but cotton mills throughout the country.³

Protection against injury from machinery, adequate provision for fire escapes, and fairly satisfactory

¹ "The Cotton Manufacturing Industry of New England," issued by the Boston Chamber of Commerce, p. 15.

² Ibid., p. 15.

³ "Big Boon to Massachusetts Textiles," The Boston Post, v. 529, no. 14, Oct. 16, 1930, p. 1

sanitary arrangements are provided in the New England mills.¹

The cotton manufacturing industry is not strongly unionized. Only about forty thousand of the seven hundred and fifty thousand operatives outside the South, belong to the unions.² Labor unions have not made great progress, partly because of the large numbers of foreigners with their racial prejudices and different languages which render it difficult for them to be made to understand.³ Also, they are unwilling to pay dues and lose wages through strikes. Their presence in large numbers has prevented the unions from successfully raising the wage level because the newly arrived immigrants from southern Europe will work for low wages.⁴

The use of automatic machinery has injured the bargaining power of labor arising from special skill, because unskilled labor can tend most of the machines.⁵

¹ Young, M. T., "The American Cotton Industry," p. 4.

² Mitchell, G. S., "The Cotton Mills Again," Survey, v. 58, no. 8, July 15, 1927, p. 412.

³ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 125.

⁴ Lauck, W. J., "The Cotton Mill Operatives of New England," The Atlantic Monthly, v. 109, no. 5, May, 1912, p. 711.

⁵ Ibid., p. 710.

The restriction of immigration excluding large quantities of cheap labor is expected to aid the unions.¹

The mule spinners organization was one of the strongest, but the introduction of the ring frame has greatly weakened it.² The loom fixers and slasher tenders unions are fairly strong because skill is required for that sort of work, and skilled workers cannot be replaced easily, but there are not large numbers of these workers.³

Many strikes and lockouts have occurred with varying success. The greatest textile strike in New England occurred in 1922, and affected 85,000 workers distributed throughout the different states. The questions involved were wage cutting and lengthening the hours of work.⁴ Without the proposed cut the weekly wages averaged only \$18.71 for full-time earnings, allowing no time for illness or shut-downs.⁵ The proposed cut of 20 per cent would have reduced

¹ "Cutting Out the Cut in Wages," The Literary Digest, v. 74, no. 11, Sept. 9, 1922, p. 10.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 123.

³ Ibid., p. 125.

⁴ Clark, Evans, "Textile Force vs. Textile Facts," The Nation, v. 114, no. 2963, Apr. 19, 1922, p. 463.

⁵ "The Searchlight on Amoskeag," Survey, v. 48, no. 1, Apr. 1, 1922, p. 7.

the wages to \$14.97 a week.¹ Another serious strike was the New Bedford strike in 1920 against a cut in wages.²

Since the war some attempts have been made to stabilize labor relations through workingmen's councils and agreements with the labor unions.³

The cotton textile industry is one in which conditions are unfavorable to health. Operatives are particularly subject to pneumonia, bronchitis, lung and throat diseases due to the high temperature and excessive humidity, and in some mills, quantities of lint and dust in the air. There are devices for carrying away the dust and lint, but they are not found in all mills. In Rhode Island conditions are particularly unfavorable.

The results of a study made in Fall River covering the years between 1908-1912 showed that a cotton mill operative in Fall River was one and one half times as likely to die before he was forty-four years old, as a citizen of that city who was not employed in the

¹ "New England's Textile War," The Literary Digest, v. 73, no. 1, Apr. 1, 1922, p. 15.

² "Cutting Wages in New England," The Literary Digest, v. 97, no. 5, May 5, 1920, p. 16.

³ Jamba, Ann, "Productivity of a New England Cotton Mill, 1838-1925," Monthly Labor Review, v. 23, no. 4, October, 1926, p. 22.

mills. The death rate among males was 14 per cent higher than among females, except in the mills, where the female death rate was higher.¹

¹ Tarbell, I. M., "The Tariff of Our Times," pp. 342-343.

CHAPTER V

MILL ORGANIZATION AND MANAGEMENT

The organization of the mills today still follows the plan used by Francis Cabot Lowell in his mill at Waltham in 1813.

The president presides at the meetings of the directors, and the treasurer acts as executive head and manages the business.¹ The officials of the mill are responsible to him, and with him rests the responsibility for the financial success of the mill. He also buys the supplies and sells the goods. An agent or superintendent attends to the practical management of the plant. If the mill is large the treasurer usually has his office at the mill, and has charge of only one mill, but several smaller mills may be under the charge of one treasurer who has his office in Boston.²

¹ Walton, Perry, "The Story of Textiles," p. 198.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 177.

The corporate form is followed almost entirely in the cotton textile industry.¹

Since the Civil War the size of the mills has increased. Large scale production makes it possible to operate more economically by making savings in the buying of supplies and in selling expenses. Big mills can afford to buy new machinery embodying the latest improvements, they can operate their own machine shops which effects savings in repairs, and they can secure power more economically. The expense of management is also reduced.

Many of these large establishments are made up of a number of smaller ones operating under the same management, finishing their own goods, and selling their product through the same agency. In this way, the smaller mills are able to secure the benefit of high-salaried management, which as individual mills they could not afford.²

Some of the extra large mills are the Amoskeag, at Manchester, N. H., the Fall River Iron Works, the

¹Census of Manufactures, 1920, p. 157.

²Bader, Louis, "World Developments in the Cotton Industry," p. 31.

Wamsutta Mills at New Bedford, Massachusetts, and the Pacific Mills at Lawrence, Massachusetts.

A plant of from 50,000 to 75,000 spindles and from 1,000 to 2,000 looms is large enough to secure the advantages of large scale production.¹

The cotton manufacturers have formed associations to enable them to get together and discuss their problems. Important among them are the New England Cotton Manufacturers' Association and the American Cotton Manufacturers' Association. At their meetings papers dealing with improvements and new methods of manufacture are read and discussed.

Local associations aim at securing better management from officials, and enable them to be united against labor troubles.

The New England Cotton Freight Claim Bureau has a different object. Its purpose is to secure better delivery of cotton, trace shipments, and secure reductions in insurance rates during transit.²

The Arkwright Club of Boston is an association

¹ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 41.

² Ibid., pp. 155-159.

of mill treasurers, and is the leading organization of cotton manufacturers in the country. Its members control three fourths of the spindles of New England.¹

Mills usually buy their cotton by contract from cotton merchants. The contract may call for delivery of all the cotton at a certain time, or it may be delivered in installments. The sale is usually made from a sample, and the large mills have experts to examine their shipments to be sure that they conform to the sample. It is important that the cotton be uniform and of the grades desired, because the mill machinery is adjusted to those grades.

The fine goods manufacturers buy their supply of raw cotton early to be sure of getting enough of the kinds they require. The ordinary grades are bought when the price is most favorable.² The wealthier New England mills have this advantage over many of their southern competitors that they have the financial resources to buy when the price is lowest.³

¹ Evans, S. M.. "The Cotton Tariff," *The World's Work*, v. 20, no. 4, August, 1910, p. 13277.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 100.

³ *Ibid.*, p. 38.

The cotton textile industry is one of the most backward in the use of modern advertising and selling methods, although it is awakening to their advantages.¹ One reason why the mills have been slow to advertise is because their grey goods were sold to jobbers or converters who marked them with their own trade-mark, and the mills received no benefit for advertising. The commission houses are now trying to persuade the retailer to order the goods of certain mills so that it has become worth while for the mills to advertise.²

The mills market their goods in four ways:

1. Direct selling
2. Through a commission house
3. Through a broker
4. To a converter

Many New England mills, chiefly in New Bedford and Fall River, sell their goods direct to a converter or printer, either through an officer of the company, generally the treasurer, or through brokers. The advantages of direct selling are that the mills are more independent, and they save the commission paid

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 104.

² Ibid., p. 127.

the selling house.¹ If the sale is made through a broker he receives 1 per cent for fine goods and 1/2 per cent for coarse goods, which commission represents the selling expense of the mill.² For this plan to be successful, the mills must be large and make diversified products, because so many mills are competing in the same lines that it is necessary to carry on a nation-wide selling campaign and the expense is heavy.³

Commission house selling began in 1812, when B. C. Ward and Company first sold goods for the Boston Manufacturing Company.⁴ The commission house is a separate firm which frequently handles the products of several mills, but the mills sell their goods through one selling house.⁵

When the mills are in need of financial assistance the selling house takes the credit risk and advances money on the goods, but mills having sufficient resources of their own do not find this advantageous.

Some commission houses have bought stock in

¹ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," pp. 208-9.

² Bader, Louis, "World Developments in the Cotton Industry," p. 104.

³ Ibid., p. 116.

⁴ Walton, Perry, "The Story of Textiles," p. 197.

⁵ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 209.

strong mills in order to secure their business, and when this is the case, they make a greater effort to sell the product to give a good return to the mill. They receive from 1 1/2 per cent to 3 per cent according to the services they furnish. For the latter figure they will make advances against the sales.

Most of the sales through commission houses have been grey goods going to converters and printers, however, now the commission houses are converting goods themselves to sell to clothing manufacturers, jobbers, and retailers. This processing they have done by finishing plants on commission.

When the mills are operating at a loss sometimes there are expenses and profits added to the cost of the grey goods equalling 300 per cent, by the time it reaches the consumer. The only way to reduce this cost seems to be to eliminate some of the factors in distribution since none of them ordinarily receives an unduly high return for his services.

In endeavoring to effect this elimination the commission houses have invested in the mills for which they sell, have established finishing departments, and are making greater sales effort. In accordance with this plan, the commission house holds a large

amount of stock in each mill and finishing plant for which it controls the selling of the product, but each acts as a separate unit. This system saves expense in management and distribution. There is a difficulty, however, in that the goods handled are so diversified that no one line can receive proper sales effort. One large commission house selling for, and controlling thirteen mills in New England is now converting the mills' grey cloth into the bleached or dyed stage and selling it direct to jobbers and cutters all over the world, thus eliminating the converter.¹

The following goods represent the output of several mills and illustrate the wide variety handled by one house: sheetings of various widths and qualities, pillow tubings, drills, tweeds, jeans, flannels, Laconia moleskins, colored damask, table covers, napkins, seersuckers, zephyrs, suitings, bedspreads, towellings, gabardines, corset fabrics, fleeced goods, shoe linings, ripplettes, wrap and filling sateens, tickings, drapery fabrics, ducks, glove fabrics, denims, awning stripes, men's, women's, and children's underwear, heavy suitings, and cassimeres.²

¹ Bader, Louis. "World Developments in the Cotton Industry," pp. 105-113.

² Ibid., pp. 134-135.

The selling house is becoming less important and sales through brokers and merchant converters are gaining in importance, especially the latter. The broker takes no responsibility, but merely brings the buyer and seller together. The merchant converter has become important because of the increase in styles and varieties. He buys the grey goods from the mills and has them finished in accordance with the demands of the trade, thus relieving the mills of some risk.¹

Many of these plants have grown to great size because it is cheaper to do the output of many mills in one plant, since skill is necessary in this work. These concerns generally do not buy goods themselves, but finish the cloth for manufacturers or merchant converters.²

New York is the chief cloth market of the country, and Boston also carries on a large business.³

The cotton textile industry is making a greater effort to sell its goods effectively. The industry,

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 217.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 152.

³ Bader, Louis, "World Developments in the Cotton Industry," p. 219.

particularly in the South, is making a market analysis to determine how much of the various kinds of goods to manufacture. The analysis shows that there has been a marked falling off in personal and household uses, and an increase in industrial uses.¹

The practice of making a large surplus and because of competition selling it at a low price has not been profitable.²

Greater effort is being made to train salesmen properly and to arrange their sales territory so that they can secure the best results with the least time and expense.³

"The cotton mills and finishing plants of New England are now producing cloths so fine, and finished so beautifully that they stand comparison with many silk fabrics."⁴ The suggestion has been made that to advertise these fine goods they be made up into garments and exhibited in some of the large cities. This would help make cotton popular again for household and personal uses.

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 120.

² Young, H. H., "Cotton Manufacturing in New England, p. 11.

³ Bader, Louis, "World Developments in the Cotton Industry," p. 122.

⁴ Ibid., p. 151.

CHAPTER VI

PROBLEMS CONFRONTING THE INDUSTRY

One of New England's greatest problems is to successfully meet Southern competition, and the question of greatest moment is whether or not the advantages of the South are permanent.

The South did not find it necessary to turn to manufacturing as early as New England did. This was due to the fact that agricultural conditions were more favorable, and manufactured goods could be bought in Europe and paid for with tobacco, and later with cotton. The latter, however, did not become the leading crop until after the invention of the cotton gin in 1793.¹

Household spinning and weaving were carried on extensively before the Revolutionary War,² and many

¹ Osgood, E. L., "A History of Industry," p. 353.

² Mitchell, Broadus, "Industrial Evolution in the Mills South," *Factory and Industrial Management*, v. 80, no. 1, July, 1930. p. 43.

cotton mills grew up in the South between 1800 and 1860.¹

At the outbreak of the Civil War in 1861, the South was enjoying considerable prosperity due to its cotton crop, which was in great demand in the North and in England.² Some cotton was also manufactured at home, although, at that time, the South had less than 10 per cent of the capital invested in the cotton textile industry, less than 15 per cent of the mills, about 8 per cent of the wage earners, and 7 per cent of the output.³

The blockade during the war ruined the South, and when the war ended that section of the country was left with debts and ruin, at a time when the rest of the country was developing its manufactures.⁴

There were few mills in the South until 1870, and one of the chief reasons for building these was to give work to the poor whites. Here they worked twelve hours a day for 75¢.⁵ However, by 1880 the growth of

¹ Burkett, C. W. and Poe, C. H., "Cotton," p. 312.

² Walton, Perry, "The Story of Textiles," p. 190.

³ Jennings, W. W., "A History of Economic Progress in the United States," p. 274.

⁴ Ibid., p. 448.

⁵ Marley, H. P., "A Southern Textile Epoch," Survey v. 64, no. 13, Oct. 1, 1930, p. 17.

Southern mills became so rapid that their progress was noted in New England with fear for its supremacy in the industry.¹ In that year there were less than 600,000 spindles in the South in comparison with 8,000,000 in New England.² Since then Southern competition has been steadily increasing.

New England first seriously felt this competition in the depression of 1893-1897, but with prosperity again restored there was sufficient demand for cotton goods to take the output of both sections.³

Then, in about 1898, the price of raw cotton dropped rapidly. The Southern mills manufacturing from the low-priced cotton could afford to sell cloth at a low price, but the Northern mills had large stocks on hand made when cotton was high, and they could not afford to sell at the low price of Southern goods. Finally the Northern mills had to sell, and they lost millions of dollars whereas, the Southern mills had made money. It was thought at that time that the Northern mills were ruined.⁴

¹ Burkett, C. W. and Foe, C. H., "Cotton," p. 314.

² Young, H. H., "Cotton Manufacturing in New England," p. 12.

³ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 53.

⁴ Clark, V. S., "The History of Manufactures in the United States," v. 3, p. 86.

The reason for the rapid growth of the cotton industry in the South is that this section has advantages over the North, although many of them are only temporary. These advantages are: nearness to raw material, cheap power, low taxes, cheap labor, long hours, absence of labor legislation, and new equipment.¹ Then, too, the South has carried on a campaign to gain Northern mills,² and New England capital controls many of the Southern mills.³ At present the Southern manufacturer enjoys an advantage that averages about 30 per cent.⁴

An analysis of these advantages discloses that some of them are more apparent than real. A Southern mill does not necessarily have a great advantage over the Northern mill in freight charges. About three fourths of the spindles of the South are in North Carolina, South Carolina, and Georgia, and these states use more cotton than they grow. Also they are now making finer yarn than their own cotton is suited to

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 164.

² Stone, O. L., 1920 Annual Report, Associated Industries of Massachusetts, p. 76.

³ Wooley, E. M., "The Men Who Made Cotton," McClures v. 44, no. 4, February, 1912, p. 79.

⁴ Mitchell, Broadus, "Southern Spindles," Yale Review, v. 14, no. 3, April, 1925, p. 506.

produce. Over half of the cotton is grown in the states west of the Mississippi River, and the Southern States average on their raw material from 60 per cent to 90 per cent of the freight rates to Fall River.¹ Cotton is brought to New Bedford by water at a saving of over \$2 a bale on the rates by rail.²

In addition, much of the cloth of the South must be sent North to market or to the finishing plants, most of which are still in the North.³ The New England mill buying cotton in Texas can get the finished goods to market in New York or Chicago at a lower cost of transportation than can the Carolina mill, whether its cloth is finished in the North or in the South because of low water transportation on the cotton and nearness to the finishing plants of New York. Nearness to market is a greater advantage than nearness to raw material.⁴

For sometime there were few finishing works in the South because the water was not thought suitable, but now they are being established, many of them by large

¹ Young, H. H., "Cotton Manufacturing in New England," p. 19.

² "Harbor Here Is Natural Asset," The New Bedford Sunday Standard, Jan. 4, 1931, p. 35.

³ Young, H. H., "Cotton Manufacturing in New England," p. 17.

⁴ Stone, O. L., 1928 Annual Report, Associated Industries of Massachusetts, p. 86.

New England finishing concerns.¹ In 1925 there were eighteen plants with a finishing capacity of sixteen million yards a week. The South finishes 80 per cent of all the denims it produces, and 42 per cent of the gingham.²

Water power is plentiful in the South, but in order to take advantage of it it may be necessary for a mill to be inconveniently located for transportation, and less than one fourth of the Southern mills use water power. Of course, the cost of coal varies with the distance from the mines. Hydro-electric power is cheap but it is not expensive in the North.

Taxes are lower and industries are usually tax exempt for a few years, but these advantages are offset by the fact that mill owners have to help provide schools, churches, and other public institutions.³ Then, too, the South is beginning to demand improvements that the North has long enjoyed, and the mills will have to help pay for them in increased taxes or pay outright in improvements in the communities that they own.⁴

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 73.

² Ibid., p. 72.

³ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 39.

⁴ Young, H. H., "Cotton Manufacturing in New England," p. 21.

The real advantage of the South lies in its labor,¹ and this advantage, too, will become less, but at present it enables the South to turn out goods cheaper than New England can, and many New England mills that make coarse cloth have established branches in the South.²

Nearly all Southern labor is native born, and the fact that the operatives speak English enables the owners to introduce new methods more easily.³ Negro labor is undependable and negroes are employed only for outside work, since no white woman will work in the room with them.⁴

The white labor of the South is independent, and will stay away from work if it feels like doing so, therefore, in order to be sure of a full labor force every day the mills must have from 20 to 25 per cent of spare help.⁵

Until 1906 the South had a 66-hour week,⁶ but now the 60-hour week is usual and no Southern State has

¹Young, H. H., "Cotton Manufacturing in New England," p. 21.

²Clark, V. S., "The History of Manufactures in the United States," v. 3, p. 174.

³Young, H. H., "Cotton Manufacturing in New England," p. 24.

⁴Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 48.

⁵Ibid., p. 41.

⁶Ibid., p. 42.

less than a 54-hour week.¹ Night work has been common but recently has been restricted for women and children.²

Alabama had a law limiting child labor to eight hours a day in factories. However, in 1894 under the influence of Massachusetts capitalists, who promised to establish factories if a cheap labor supply was obtainable, the law was repealed. The South resents such action for the benefit of Northerners whose children are protected.³

The South is beginning to pass labor legislation and North Carolina, South Carolina, Georgia, and Alabama all have a twelve year age limit, with qualifications, although the laws are not strictly enforced.⁴

Twenty-five years ago there were over twenty seven thousand children working in Southern mills,⁵ but according to the 14th Census the greatest change in the condition of the industry prior to 1919 was the reduction of child labor in the South.⁶ Southern employers

¹ "The Cotton Manufacturing Industry of New England," issued by the Boston Chamber of Commerce, p. 15.

² Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 42.

³ Young, M. T., "The American Cotton Industry," p. 28.

⁴ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 116.

⁵ Ibid., p. 44.

⁶ Fourteenth Census of the United States, 1920, p. 157.

are finding child labor unprofitable.¹

The workers have begun to understand somewhat their advantage. Although 90 per cent of the families who go to a good mill improve their living conditions,² and their regular wages though small are attractive, they soon learn of higher wages paid elsewhere and become dissatisfied.³

Mill owners are making their villages more attractive by adding recreational and educational opportunities because of the competition for workers. The Southern cotton mills "have the most completely developed welfare system of any great industry."⁴

Wages were raised during the World War and with the decline in wages that followed the close of the war there was a tendency towards unionism, and strikes occurred.⁵ All strikes were not merely over the question of wages. Other controversial matters were the long hours, the operation of a larger number of machines

¹ Copeland, M. T., "The Cotton Manufacturing Industry of the United States." p. 44.

² Moses, Kingsley, "The Other Side of the Cotton Mill," *The Outlook*, v. 113, no. 17, Aug. 23, 1916, p. 980.

³ Young, H. H., "Cotton Manufacturing in New England," p. 28.

⁴ Mitchell, Broadus, "Southern Spindles," *Yale Review*, v. 14, no. 3, April, 1925, p. 501.

⁵ *Ibid.*, p. 502.

with no increase in pay, and the right to organize.¹

The American Federation of Labor and the Women's Trade Union League decided to carry on a campaign to introduce the union into the South in 1927,² and the American Federation of Labor at its convention in Toronto in 1929 voted to carry on the work in further attempts to unionize the South.³

Northern membership in the Cotton Textile Institute, an association which includes both Northern and Southern mill operatives in its membership, wants that organization to start a drive to enact laws against the low wages, long hours, and night operation.⁴ Such action on the part of labor will in the end lessen the difference between Northern and Southern hours and wages.

The census of manufactures of 1925 showed that of the total value of cotton goods added by manufacture the proportion represented by wages was nearly 62 per

¹ Mitchell, Broadus, "Industrial Evolution in the Mill South," *Factory and Industrial Management*, v. 80, no. 1, July, 1930, p. 41.

² Mitchell, Broadus, "The Cotton Mills Again," *Survey*, v. 58, no. 8, July 15, 1927, p. 411.

³ Mitchell, Broadus, "Industrial Evolution in the Mill South," *Factory and Industrial Management*, v. 80, no. 1, July, 1930, p. 42.

⁴ *Ibid.*, p. 42.

cent in New England, 50 per cent in Georgia and South Carolina, and 54 per cent in North Carolina.¹

In 1927 the average wages of five leading cotton manufacturing states in the South were \$12.94, or \$14.92, if only full time earnings were taken.² The average hours per week in 1928 were 55.4.³ Already in the Carolinas the mill owners are complaining about competing with the cheap labor of the far South.⁴

The following table shows the earnings in the important cotton manufacturing states of the South.

Average Weekly Wages in the Cotton-Goods Industry, 1930 *

State	Occupation				
	Spinning, Frame		Weaver		Loom Fixer
	Male	Female	Male	Female	Male
North Carolina	10.85	12.71	20.50	18.57	25.14
South Carolina	9.37	12.17	19.02	17.10	22.08
Georgia	11.35	12.57	17.31	16.97	21.49
Virginia		13.33	18.60	17.62	23.35
Alabama		11.37	18.08	16.62	22.02 5

* See Page No. 43 for table of earnings in New England.

¹ Young, H.H., "Cotton Manufacturing in New England," p. 23.

² Mitchell, Broadus, "Industrial Evolution in the Mill South," Factory and Industrial Management, v. 80, no. 1, July, 1930, p. 72.

³ Ibid., p. 72.

⁴ Stone, O. L., 1928 Annual Report, Associated Industries of Massachusetts, p. 76.

⁵ Monthly Labor Review, v. 31, no. 5, November, 1930, p. 169.

Figures taken from the National Industrial Conference Board and from records of the American Cotton Manufacturers Association indicate that housing facilities are worth \$4.36 a week,¹ and in addition, Southern operatives receive the benefit of much welfare work,² and food and clothing cost less in the South and less fuel is needed.³

Conditions in the South are similar to those in the North when the industry there was in the corresponding stage of development, and the Southern industry will probably follow the same course as that of the North. Higher wages are being demanded instead of welfare work, the unions are establishing themselves, and labor legislation is being enacted. As other industries locate in the South the competition for labor, sites, and power will increase manufacturing costs.⁴

The South has found that cheap labor does not necessarily mean low costs, but that it does mean inferior goods.⁵

¹ Clark, Evans, "Textile Force vs. Textile Facts," *The Nation*, v. 114, no. 2963, April 16, 1922, p. 464.

² Mitchell, Broadus, "Southern Spindles," *Yale Review*, v. 14, no. 3, April, 1925, p. 501.

³ "The Cotton Manufacturing Industry of New England," issued by the Boston Chamber of Commerce, p. 9.

⁴ Young, H. H., "Cotton Manufacturing in New England," pp. 507-8

⁵ Jennings, W. W., "A History of Economic Progress in the United States," p. 602.

The factor of greatest importance in Southern competition since 1921 is the relative number of active spindle hours. In 1914 the number of spindle hours was about equal for the North and South, but in 1928 the hours had almost doubled in the South due to the longer hours and night work.¹ The more productive the equipment the less the cost of manufacture, and the Southern mills can make a profit when the New England mills cannot.²

The South can make coarse goods more profitably than can New England, but the North is greatly superior in the manufacture of fine goods and specialties.³ It is to this class of goods that New England must give her attention in order to employ her present machinery and labor.⁴

However, the South is beginning to develop the fine goods line. "There are fine yarn mills in Greenville, South Carolina making complicated and more fashionable mixtures than any mill in New England has yet essayed."⁵

¹ Stone, O.L., 1928 Annual Report, Associated Industries of Massachusetts, p. 87.

² Young, H.H., "Cotton Manufacturing in New England," p. 15.

³ Ibid., p. 15.

⁴ Bader, Louis, "World Developments in the Cotton Industry," p. 77.

⁵ Ibid., p. 71.

out less than 8 per cent of all fine-goods looms of the country are in the South.¹ In the making of style goods demanding quick delivery the Southern mills are at an advantage because their long hours enable them to make quick deliveries.²

The bulk of goods in both sections is coarse and medium-grade goods. New England manufactures more print cloth, twills, sateens, fancy woven fabrics, napped fabrics, corduroys, cotton velvet, and plush; the South makes mostly sheetings, shirtings, ducks, drills, and cottonades; both sections are about equal in the making of gingham, ticks, denims, and stripes.³

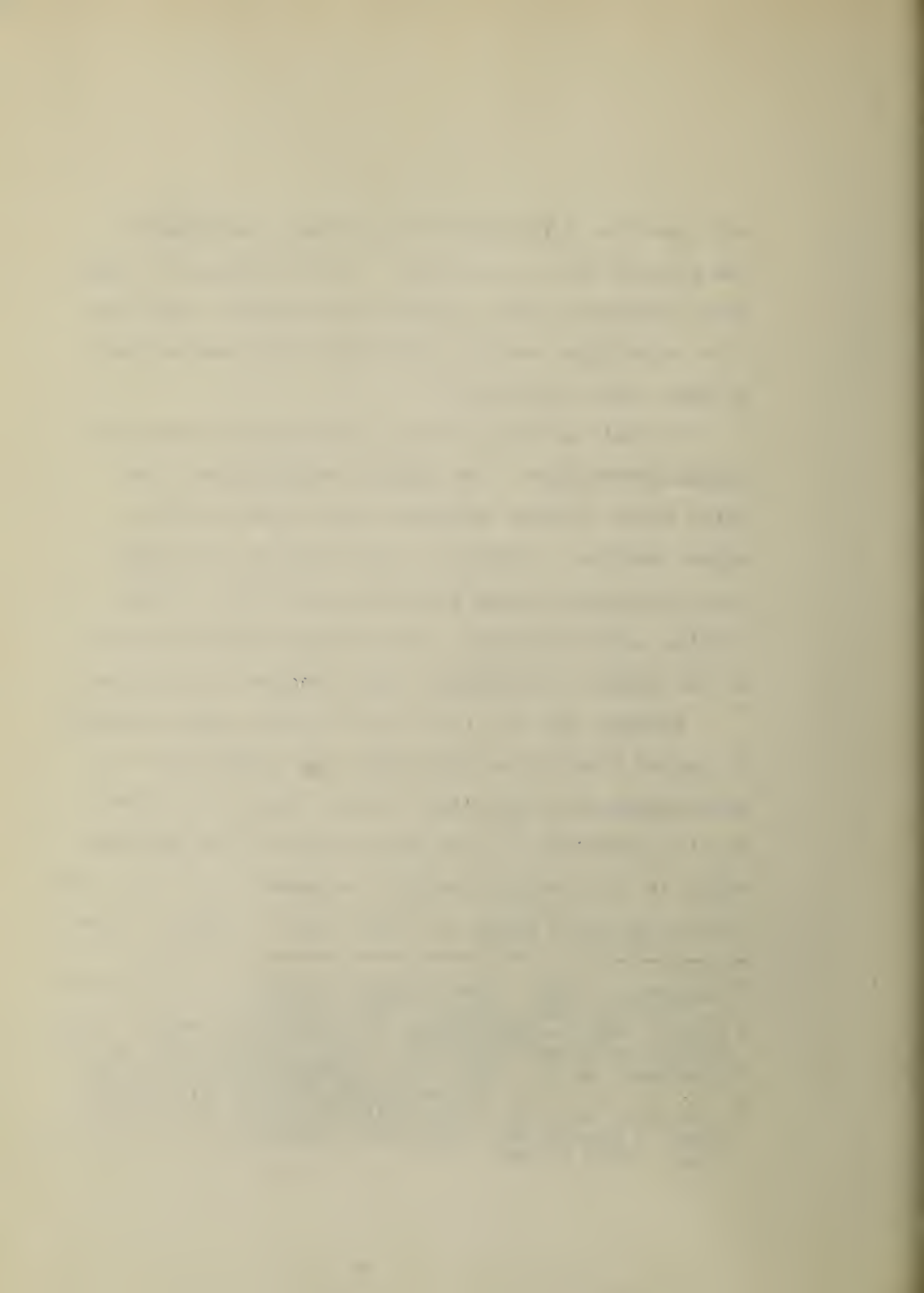
Between 1925 and 1927 the Southern mills increased in number from 809 to 834, while New England lost 30 establishments during that period. The South gained 34,416 operatives and New England lost 9,312, and the value of the Southern product increased from 54 per cent of the country's total to 57 per cent.⁴ However, New

¹ Blanchard, Paul, "New Bedford Carries On," *The Nation*, v. 126, no. 3285, June 20, 1928, p. 692.

² "Lower Textile Taxes Urged by Industrial Board," *The Christian Science Monitor*, v. 25, no. 12, Dec. 9, 1930, p. 3.

³ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," pp. 146-147.

⁴ Mitchell, Broadus, "Industrial Evolution in the Mill South," *Factory and Industrial Management*, v. 80, no. 1, July, 1930, p. 72.



England manufacturers are still preparing for an increase in business as is shown by the recent opening of two new large finishing plants, one in 1927 at Sturbridge,¹ and one at North Adams in 1929.²

Southern competition may eventually prove to be a benefit to New England mills if it forces them to improve their conditions by developing a finer, more profitable line of goods, strengthening their organization, reducing labor costs by installing new, modern machinery, and demanding more efficient management. Of course, some time will be required before a real adjustment can be made, but when it finally is achieved the financially weak mills will have disappeared, and obsolete equipment will have been replaced.³ Readjustments will probably be necessary as conditions in the industry change. The fact that the cotton textile industry is not seasonal, except for novelty goods, should make the stabilization of the industry simpler.

The following tables show the growth of the industry in the South.

¹ Industry, v. 23, no.23, Aug. 3, 1929, p. 14.

² Industry, v. 23, no.16, June 15, 1929, p. 3.

³ Young, H. H., "Cotton Manufacturing in New England," p. 30.

**Increase in the Number of Spindles in the Important
Cotton Manufacturing States of the South**

	North Carolina		South Carolina		Georgia	
Year	Mills	Spindles	Mills	Spindles	Mills	Spindles
1850	23	40000	13	36500	35	51150
1860	39	41884	17	30890	33	85186
1870	33	39857	12	34940	34	85062
1880	49	100209	14	82424	40	198656
1890	105	413900	44	415158	62	465811
1900	213	1428066	115	1908692	107	1016258
1909	281	2903333	147	3754251	116	1767783
1919	311	4622714	145	4949225	132	2459143
1927	374	6073027	163	5422526	139	2921349

	Alabama		Other Southern States	
Year	Mills	Spindles	Mills	Spindles
1850	12	16960	47	119961
1860	14	35742	69	130352
1870	13	28046	62	156101
1880	16	49432	44	137737
1890	17	84150	55	356142
1900	49	550966	87	709605
1909	51	885803	58	925752
1919	53	1108933	81	1357393
1927	68	1447441	90	1034120 ¹

¹ Arranged from figures taken from the United States Census.

Percentage of Total Cotton Consumption Used in the South

Year	Per cent	Year	Per cent
1880	12 ¹	1920	55
1890	25 ²	1925	67
1910	45 ³	1928	74 ⁴

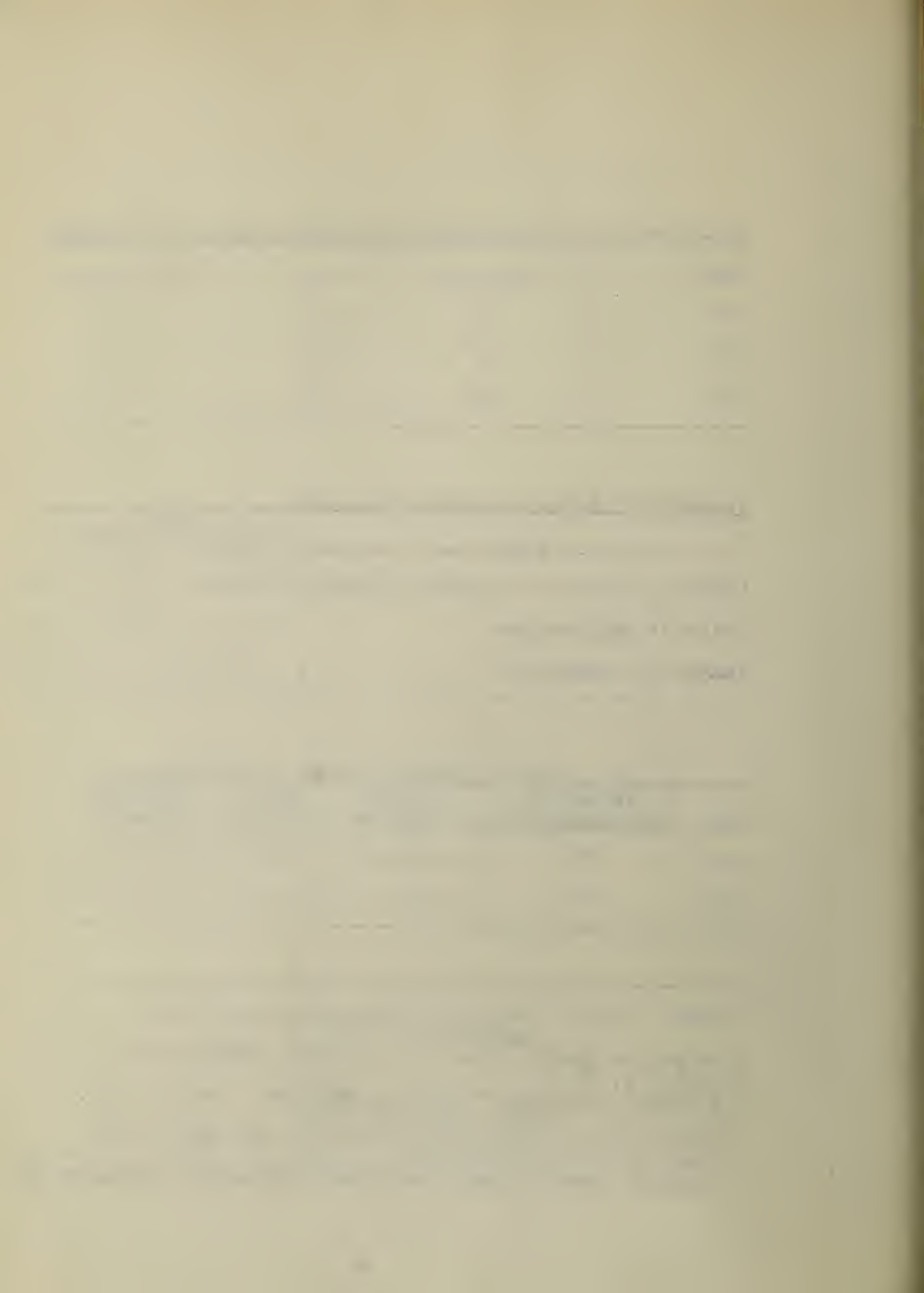
Comparative Study in Growth 1909-1930

Item	Year	
	1909	1930
Capital invested in Southern plants	\$238,592,500	\$3,000,000,000
Value of manufactures	3,000,000,000	10,000,000,000
Number of employees	1,261,000	1,750,000 ⁵

Cotton Growing States 1919-1927

Year	Number of Establishments	Active Spindles	Wage Earners	Value of Product
1919	714	14,568,272	189,180	\$906,805,617
1927	834	17,873,568	277,320	900,626,448 ⁶

- ¹ Bader, Louis. "World Developments in the Cotton Industry." p. 164.
² Census of manufactures, 1925, Cotton Manufactures, p. 11.
³ Ibid., p. 11
⁴ Mitchell, Broadus, "Southern Spindles," Yale Review, v. 14, no. 3, April, 1925, p. 505.
⁵ "Educators Put Changing South Under Analysis," The Christian Science Monitor, v. 22, no. 300, Nov. 17, 1930. p. 3.
⁶ Arranged from figures taken from the United States Census.



New England 1919-1927				
Year	Number of Establishments	Active Spindles	Wage Earners	Value of Product
1919	346	17,542,926	211,110	\$1,000,273,149 ¹
1927	302	16,081,961	166,661	519,218,369

Comparison of the Number of Spindles in the South and in New England 1840-1928

Year	Active Cotton Spindles	
	South	New England
1840	181,000	1,597,000
1850	265,000	2,959,000
1860	324,000	3,859,000
1870	328,000	5,498,000
1880	561,000	8,632,000
1890	1,570,000	10,934,000
1900	7,631,000	14,203,000
1910	10,494,000	15,735,000
1920	15,231,000	18,237,000
1928	18,222,000	13,815,000 ²

In 1927 New England had 1,517,392 against 116,935 in the cotton growing states for the number of idle spindles.³

¹Arranged from figures taken from the United States Census.

²Statistical Abstract of the United States, 1929, p. 833.

³Ibid., p. 333.

At first the market for cotton goods was so large that money could be made with poor business methods, but with the increase of competition, waste in the industry lowered returns or caused loss, and competition is now so keen that it is absolutely necessary to keep manufacturing costs as low as possible in order to make a profit.

During the war period, 1914-1919, the industry prospered due to the high prices, and the production was increased, although when the war broke out the New England mills were operating at only 80 per cent of their capacity.¹ After the war, of course, with the return to normal conditions there was overproduction in the industry.

The present depression began in 1923,² and is world-wide in extent.³ The increasing volume of production has caused a decline in prices all over the world.⁴

The industry in the United States has grown faster than consumption, and if we are to utilize our full

¹ Clark, V. S., "The History of Manufactures in the United States," v. 3, p. 86.

² "Cotton Cloth Industry," Senate Document No. 150, p. 5.

³ Ibid., p. 1.

⁴ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 263.

The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is one of the most important and most difficult in the history of science. The second part of the paper is devoted to a discussion of the various theories of the origin of life. It is shown that the most plausible theory is that of spontaneous generation. The third part of the paper is devoted to a discussion of the evidence in favor of spontaneous generation. It is shown that the evidence is very strong and that it is not possible to explain the origin of life in any other way. The fourth part of the paper is devoted to a discussion of the implications of the theory of spontaneous generation. It is shown that the theory has important implications for the study of the history of life on earth.

The fifth part of the paper is devoted to a discussion of the various objections to the theory of spontaneous generation. It is shown that the objections are not valid and that the theory is still the most plausible one. The sixth part of the paper is devoted to a discussion of the various experiments that have been conducted in order to test the theory of spontaneous generation. It is shown that the results of these experiments are in favor of the theory. The seventh part of the paper is devoted to a discussion of the various applications of the theory of spontaneous generation. It is shown that the theory has many important applications in the study of the history of life on earth.

capacity for production about 20 per cent of our output must be exported.¹

England has been the leading country in the exportation of cotton goods, but during the World War when that nation was using all of its industries for war purposes, those countries which had formerly depended on her for cotton goods had to look to the United States to supply their needs, and our exports of cotton goods increased tremendously.²

The high prices prevailing during the war period prompted the establishment of new mills in many countries, and this has had a serious effect on the cotton exports of the United States and her chief competitor, Great Britain.³

Japan has now become the competitor of both countries for the Oriental trade, which was their most important field.⁴ The industry started in Japan along modern lines about 1900,⁵ and received a great impetus during the war. The country is well adapted to gain

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 64.

² Ibid., p. 6.

³ Ibid., p. 7.

⁵ Mitchell, Broadus, "Industrial Evolution in the Mill South," *Factory and Industrial Management*, v. 30, no. 1, July, 1930, p. 43.

⁴ Bader, Louis, "World Developments in the Cotton Industry," p. 20.

this trade because of special advantages. The Oriental market absorbs great quantities of cheap, coarse goods, and Japan is near her source of raw material because the low-priced cotton of China and the East Indies is suitable for this class of goods. She is also close to her great markets in China, India, and the East Indies. This enables her to understand their requirements, she can ship goods quickly, and the great saving in freight makes possible a lower price than her competitors can meet. Her labor supply is abundant and cheap, the industry runs a double shift, and receives government assistance.

However, her great progress has been made in spite of difficulties. The cheap labor is inefficient, there is a lack of skilled managers, capital is scarce, and machinery and raw materials must come from outside sources.¹

India has been the largest export market of the world for cotton goods, but 90 per cent of her goods came from England and only about one half of one per cent came from the United States.² Now that

¹ Bader, Louis, "World Developments in the Cotton Industry," pp. 16-20.

² Copeland, M. T., "The Future of the Cotton Industry," The Atlantic Monthly, v. 126, no. 5, November, 1920, p. 695.

percentage will be lowered due to Japanese exports, and India apparently intends to further develop her own industry because she has bought cotton machinery and enacted tariff laws.¹

China has been the export market next to India in importance, although China has made about one half of her goods on hand looms. She, too, is beginning to feel the influence of the industrial movement, and cotton mills are being established, many of them under Japanese control.² She has been the country which has received the greatest amount of the cotton goods exported from the United States,³ but our trade has fallen off greatly due to the establishment of the industry in China and Japan, and it does not seem probable that we shall regain it.⁴ Since 1912 our trade with China has been controlled by the South, thus the loss of the Chinese market will not be felt so severely by New England mills.⁵

Our Oriental trade in coarse goods seems to be

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 29.

² Ibid., p. 2.

³ Copeland, M. T., "The Cotton Manufacturing Industry of the United States," p. 24.

⁴ Bader, Louis, "World Developments in the Cotton Industry," p. 26.

⁵ Walton, Perry, "The Story of Textiles," p. 191.

definitely on the decline, but there is still a large market for fine goods. At the present time, however, England controls this trade.¹

Latin America is still an important export market, and as these countries secure more stable governments their wealth will increase and the increased purchasing power will give still greater opportunities to export finer grades of goods. Here, too, we must meet the competition of Great Britain in the fine-goods line. In the coarse goods the South will secure most of the business because of its cheaper goods, and the advantage over New England in nearness to these markets.² The Latin American countries also undertook to develop cotton manufacturing during the World War and they have made considerable progress in the manufacture of coarse goods.

Africa is a future market that has not been extensively cultivated, but with the development of the country there will be purchasing power and a demand for cotton goods.³

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 31.

² Copeland, M. T., "The Future of the Cotton Industry," The Atlantic Monthly, v. 126, no. 5, November, 1920, p. 694.

³ Bader, Louis, "World Developments in the Cotton Industry," p. 68.

The decline in the price of cotton goods has caused a demand for cheap cotton, and many countries are growing more cotton. Particularly is Great Britain trying to encourage its growth in the parts of her empire suited to its production.

The increase in the production of cheap cotton in many parts of the world will threaten our supremacy as a cotton producer, and better, cheaper methods of producing our cotton will have to be found if we are to secure raw material cheaply enough to compete successfully in the cotton-cloth industry with other countries because the cost of the raw cotton averages 60 per cent of the cost of a pound of cloth.¹ The demand for cotton in industry keeps up the price of the raw material for the cloth manufacturers.² The attempt is being made to produce flax more cheaply by developing a new retting process because of the high price of cotton.³

The future world demand for cotton cloth will be greatly increased if cheap enough goods can be

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 94.

² Copeland, M. T., "The Future of the Cotton Industry," The Atlantic Monthly, v. 126, no. 5, November, 1920, p. 694.

³ Bader, Louis, "World Developments in the Cotton Industry," p. 167.

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produced. This opinion is based on the increase in population, a greater demand with the rising standard of living, the opening of undeveloped countries, the use of cotton as a substitute for other textiles, and its increasing use in industry.¹

New England ought to be able to secure a fair share of business in the world markets. The improved machinery, efficient management, and skilled labor should enable her to produce goods that can compete successfully in price and quality with other producers. Although wages are higher, the productivity of labor is greater than in other countries, and labor is easily adapted to new processes.² Her geographical location is favorable for the development of a large export business, and most of her large cotton mills are near the sea coast.

In order to compete successfully, New England should study methods followed by other countries. When England's customers began manufacturing coarse goods on a large scale she turned to making fine goods,³

¹ Copeland, M. T., "The Future of the Cotton Industry,"
² The Atlantic Monthly, v. 126, no. 5, November, 1920, p. 695.
 Laughlin, J. L., "Industrial America," pp. 21-22.
³ Bader, Louis, "World Developments in the Cotton
 Industry," p. 40.

and incidentally secured greater profit from the fine-goods line.

Another policy of importance in securing export business, and which can more readily be adopted, is a greater effort in studying the requirements of foreign markets. A chief reason for Japan's supplanting the United States in Manchuria was that the Japanese found out exactly what was needed in cotton goods and supplied it.¹

Our goods need to be packed more carefully to insure good condition upon arrival, and more favorable credit arrangements can be made. At times our manufacturers have delayed shipments when domestic business has given them orders. Such treatment, of course, causes dissatisfaction, and with quality and prices the same for competing goods, importers are going to give their business to the country which gives the best service.²

The attempt should be made to develop new markets rather than to try to gain them from competitors.³

¹ Copeland, M. T., "The Future of the Cotton Industry," *The Atlantic Monthly*, v. 126, no. 2, November, 1920, p. 701.

² Ibid., p. 230.

³ Ibid., p. 703.

New England mills have felt foreign competition, not only in the export market, but at home as well. In 1913 England sent us six tenths of a per cent of her fine goods, and in 1923 the amount had risen to 4.6 per cent.¹ In 1924 when our own mills were operating at about 60 per cent of their capacity, and some of our fine goods mills were closed because they had no orders, the United States received 200,000,000 square yards of fine cotton goods from England. The English goods undersold our own in spite of the tariff of 45 per cent ad valorem.²

Another difficulty which our cotton textile industry has to face is the competition of other fabrics with cotton: rayon competes heavily in the low-priced market, and silk in the high-priced market.

The rapidly changing styles make it difficult for large mills to adapt themselves to keeping up with current demands in novelty goods that are for immediate delivery. The big mills are accustomed to manufacture goods sold six months in advance, and cannot make the rapidly changing goods. Nearly all the New England

¹ Bader. Louis, "World Developments in the Cotton Industry," p. 53.

² Ibid., p. 3.

mills are large, which means that it is difficult for them to change from the staple lines that are all over-produced. Quality goods are also not adapted to mass production which is necessary to utilize the equipment of large mills.¹

Overproduction is a serious difficulty of both North and South. Both sections have plant capacity in excess of demand, and in some lines the market is glutted. The demand for cotton goods has decreased: dresses take much less material per garment, and fewer cotton dresses are worn.

New England mills face other difficulties: the burden of taxation has been heavy,² and Massachusetts, the leading state in the country in cotton textile production,³ has suffered from restrictive labor legislation. She is the only important manufacturing state with a 48-hour week, and as mentioned before, her laws prohibit night work for women, and child labor under fourteen is prohibited.⁴ The contention is made that the 48-hour week is not as important a

¹ "The Cotton Manufacturing Industry of New England," issued by the Boston Chamber of Commerce, p. 29.

² Stone, C. L., 1920 Annual Report, Associated Industries of Massachusetts, p. 76.

³ Leck, A. J., "Cotton Manufactures," Census 1920, p. 157.

⁴ Young, H. H., "Cotton Manufacturing in New England," p. 24.

factor in the situation as is claimed because the South has always had longer hours than the North without causing distress to the Northern mills,¹ but that view overlooks the fact that competition has grown keener and that every factor in production costs must be more carefully considered.

Inefficient management is hampering some New England mills.² Too many mill executives and directors hold their positions through inheritance,³ and are not fitted for their responsibilities. They devote too little energy to their business, and spend too much time away from it.⁴

Hand to mouth buying is also considered to be one of the difficulties affecting the cotton industry. It is not favorable for mass production, therefore costs are higher, and the goods become more expensive. Many believe this to be one of the causes for losses to the cotton mills since 1921.⁵

¹ "Cotton and the 8-Hour Day," Survey, v. 53, no. 1, Oct. 15, 1924, p. 80.

² Young, H. H., "Cotton Manufacturing in New England," p. 30.

³ "Aggressive Leadership Needed for Textile Industry," The New Bedford Sunday Standard, Jan. 4, 1931, p. 37.

⁴ Stone, C. L., 1928 Annual Report, Associated Industries of Massachusetts, p. 76.

⁵ Bader, Louis, "World Developments in the Cotton Industry," p. 151.

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Another reason for loss in earnings is because of the small margin between the cost of the raw cotton and the selling price of the finished goods. If a mill has sold its goods and can buy raw material cheaply it can quote a low price on new goods which other mills must meet because of competition. As is often the case, the mill with large stocks on hand may have bought its raw material at a higher price, and if so, must take a loss on its goods.¹

In a new industry changes come rapidly, but in an old, established industry like cotton manufacturing they must take place slowly. Economic changes are forcing manufacturers to try to remedy the unfavorable conditions, and it does not seem reasonable that New England will lose a great part of its cotton textile industry during the period of adjustment.²

¹ Young, H.B., "Cotton Manufacturing in New England," p. 10.

² Ibid., p. 30.

CHAPTER VII

SUGGESTED REMEDIES

The following pessimistic quotation should give encouragement to those interested in the distressed cotton industry. "It is our opinion that there are too many factories engaged in making coarse cotton goods. At the North this is self-evident for coarse goods can be manufactured cheaper in the South, and with the great number of factories now in operation in Georgia, Alabama, Tennessee, South Carolina, and other states how can it be expected that our Northern manufacturers can long hold the ground against them? They cannot do it Go into the manufacturing of finer fabrics, give your cotton yarn more labor, employ more skill, and spend more for fine machinery. If you do not take this advice the chance is that you will lose your machinery, factories, and all."¹

That should be encouraging because it was written

¹ Stone, C. L., 1928 Annual Report, Associated Industries of Massachusetts, p. 75.

in a magazine for the cotton industry in 1854,¹ and since that time the Northern mills have experienced their greatest expansion. They continued to increase until 1921 when the peak was reached, and since that year there has been a steady decline in the number of spindles operating in New England. Some mills have moved to the South, others have gone out of business, and others are operating only part of the time.² Apparently the time has now come when the change to fine goods production is necessary. In 1923 the coarse-goods mills of Fall River had a very poor year and made little money, while the fine-goods business of New Bedford prospered.³

One of the great wastes in industry is due to idle equipment, idle plants, and idle men,⁴ and the New England cotton industry is confronted with overcoming this condition. According to Ethelbert Stewart, there is no industry in the country that could not produce all it can sell with its present

¹ Stone, O. L., 1928 Annual Report, Associated Industries of Massachusetts, p. 75.

² Young, H. H., "Cotton Manufacturing in New England," p. 4.

³ "Cotton-Cloth Industry," Senate Document, No. 150, p. 6.

⁴ Filene, E. A., "The Way Out," p. 110.

equipment working thirty hours a week because the use of machinery has so increased output.¹

The treasurer of the Pequot Mills in Salem, Massachusetts, has recently declared that in order for the cotton industry to prosper there must be a universal adoption of the 48-hour week. This would enable the mills to produce all the goods needed and give more employment.²

With the productive capacity of the country already too large, it is obvious that no new mills should be built until the demand for cotton goods takes all that can be produced with the present equipment. Development should come rather from adapting the existing mills to the manufacture of fine goods wherein there is less competition and overproduction, and many coarse-goods mills with sufficient capital to buy new equipment are considering entering the fine-goods business.³

Production costs can be reduced in some of the

¹ Stewart, Ethelbert, "Ultimate Effects of Automatic Machine Production," Monthly Labor Review, v. 26, no. 3, March, 1929, p. 48.

² "Pequot Official Says 48-Hour Week is Need for Textile Industry," The Salem Evening News, Dec. 26, 1930, p. 1.

³ Leary, F. J., "City's Industry Weathers a Year of Hard Knocks," The New Bedford Sunday Standard, Jan. 4, 1931, p. 33.

staple lines by standardization of product. in regard to width, weight, count, and colors.¹

A greater use of research would benefit the industry. It should be conducted on a sufficiently large scale to study all phases of the industry, and in order to do this many mills could help defray the expenses and share the benefits. Some of the problems needing study are: better classification of cotton for certain purposes; the causes of different spinning qualities; time study; what is the maximum production and how to secure it; job analysis to reduce labor turnover and effect a great saving in time and materials lost in training new help; markets; better methods of distribution; and style trends, for such mills as manufacture novelties.²

Thus far the New England textile mills have been very slow in accepting scientific management, but they must do so if they are to operate as efficiently as possible.³ Formerly labor leaders were opposed to scientific management but they are now beginning to regard it favorably.⁴

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 139.

² Ibid., p. 409.

³ Ibid., p. 83.

⁴ Monthly Labor Review, v. 23, no. 4 October, 1926, p. 32.

Many of the mills in this section are housed in old buildings, have old machinery, and are poorly laid out for efficient production. The following illustrates what may be accomplished by a properly designed plant, planned for direct routing of the product, and equipped with new, improved machinery. An old establishment with a new mill made a study comparing the output of the new mill with the old on the same kind and grade of goods, and found that production per man hour increased from 2.24 pounds in the old mill of 1876, to 8.94 pounds in the new mill.¹

Advertising is another important factor needing more attention. The advertising of cotton goods in general to create demand is needed, and each mill must advertise its own goods to create a demand for them. One inexpensive way for mills to advertise is for them to display signs showing the name of the mill and what it makes.

Another practice that the mills could profitably carry out is to see that their goods, where they make

¹ Jamba, Ann, "Productivity of a New England Cotton Mill, 1838 to 1925." Monthly Labor Review, v. 23, no. 4, October, 1926, pp. 26-27.

consumer products, are sold locally.¹

The Massachusetts Industrial Commission report filed with the General Court on December 8, 1930, asks for tax reduction for the cotton textile industry, for help in obtaining a national 48-hour law, and that the legislature enact no new laws which will restrict the textile industry until the other states catch up with the advanced labor laws of Massachusetts.²

The greatest needs of New England to enable her to compete with the South are to find some means of establishing wage levels on a comparative basis, and of eliminating inequalities in labor legislation.³

That relief measures are necessary for New England is shown by the fact that Massachusetts alone has lost 3,530,000 spindles and 46 000 workers since 1922.⁴

¹ Stone, C. L., "New England's Industrial Future," p. 46.

² "Lower Textile Taxes Urged by Industrial Board," The Christian Science Monitor, v. 23, no. 12, Dec. 9, 1930, p. 3.

³ "The Cotton Manufacturing Industry of New England," issued by the Boston Chamber of Commerce, p. 22.

⁴ "Lower Textile Taxes Urged by Industrial Board," The Christian Science Monitor, v. 23, no. 12, Dec. 9, 1930, p. 3.

CHAPTER VIII

REMEDIAL MEASURES ALREADY UNDERTAKEN

Although the situation of the cotton cloth industry is still serious, the fact that its difficulties are understood, and that a determined effort is being made to correct its weaknesses affords much encouragement in regard to its future. Not only are the cotton manufacturers of New England aware of what needs to be done, but important measures have already been put into effect.

Savings in distribution have been made by eliminating the converter, jobber, and the export commission house.¹

Mills which make suitable products, such as table sets, towels, sheets and pillow cases, are giving attention to attractive packaging.²

Mills in New Bedford and vicinity have made a

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 166.

² "Cotton Cloth Prices Hold Fairly Steady," The Christian Science Monitor, v. 22, no. 301, Nov. 8, 1930, p. 14.

THE

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considerable saving by having their shipments made in full cargo lots, and a lesser saving can be made by mills in other parts of New England. The smaller mills could pool their shipments.¹

New uses for cotton have been developed and the progressive mills have changed their equipment to take advantage of the new lines.²

The Firestone Cotton Mills of Fall River have changed from an eight-hour day to one of six hours, and have added more employees.³

The Pacific Mills have carried on research quite extensively. Part of their laboratory equipment is a small cotton mill in which experiments are tried with small expense.⁴ These mills are now operating their own selling organization.⁵

An effort is being made to standardize certain goods. Already the different sizes and widths of duck have been reduced from 460 to 94, and bed blankets

- ¹ Dyer, H. C., "Charges Hinder Port Progress," The New Bedford Sunday Standard, Jan. 4, 1931, p. 37.
- ² Young, H. H., "Cotton Manufacturing in New England," p. 8.
- ³ "Textile Trade Boom Reported," The Boston Herald, v. 168, no. 182, Dec. 29, 1930, p. 4.
- ⁴ Greene, E. F., "When to Say 'Yes' to a New Idea," Factory and Industrial Management, v. 76, no. 1, July, 1928, p. 52.
- ⁵ Stone, C. L., 1928 Annual Report, Associated Industries of Massachusetts, p. 92.

from 78 to 12.¹

An attempt is being made to prevent such great labor turnover by offering inducements to remain with the same mill, either by giving bonuses increasing with each year's service, by giving vacations with pay, or similar devices.²

Many mills now advertise their products and display the name and product conspicuously on their buildings, others invite visitors to inspect their plant.

The mill men plan to undertake a study of distribution problems and have asked the United States Institute for Textile Research to assemble for them the data of what has already been accomplished by other organizations.³

The Textile Integrity Guild of Individuals has been formed by leaders of the industry to try to raise the standard of ethics.⁴

¹ Bader, Louis, "World Developments in the Cotton Industry," p. 139.

² "Labor Turnover," Monthly Labor Review, v. 24, no. 2, February, 1927, p. 41.

³ "Textile Men Plan Distribution Study," The Christian Science Monitor, v. 23, no. 10, Dec. 6, 1930, p. 2.

⁴ "Textile Trade Acts to Clean Its Own House," The Christian Science Monitor, v. 22, no. 301, Nov. 18, 1930, p. 1.

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Some efforts have been made to aid the industry by those interested in its success other than mill owners. For example, the New Bedford Board of Commerce has prepared stickers encouraging the use of domestic goods. They have been used by some of the mills in their pay envelopes and the mills report that they are receiving cooperation from the workers.¹ The graduating class of the New Bedford High School in 1927 agreed to dress in goods manufactured in that city.² In Fall River an organization made up of citizens, mill officials, and representatives of the operatives has been formed to stimulate the local use of Fall River goods.³

The Federal Government has offered encouragement by appointing special agents of the Department of Commerce to study foreign markets for the sale of cotton goods.⁴

Several communities have reduced the tax rates on textile plants since 1927. or have placed lower valuations

¹ Stone, O. L., "New England's Industrial Future," p. 44.
² Lane, Marian, teacher New Bedford High School.
³ Stone, O. L., "New England's Industrial Future," p. 44.
⁴ Bader, Louis, "World Developments in the Cotton Industry," p. 156.

on them.¹

The most important development of 1930 was the fact that the Northern and Southern textile interests stopped fighting each other and began cooperating for mutual protection.²

Of great benefit to New England is the action of the delegates to the Cotton Textile Institute of New York, in eliminating women and minors under eighteen from night work, beginning March 1, 1931. This will tend to greatly equalize labor conditions between the North and the South, and is one of the most far-reaching movements that has taken place in the industry in many years.³ To become fully operative it must be accepted by 75 per cent of the spindles in the whole industry the first year, 80 per cent the second year, and 85 per cent the third year.⁴ Already it has been accepted by mills operating 26,000,000 spindles or 83 per cent of our total number of spindles.⁵ This measure will help stabilize the industry

¹ Young, H. H., "Cotton Manufacturing in New England," p. 20.
² Talmage, A. A., "Cooperation Aids Textile Outlook for Coming Year," New Bedford Sunday Standard, Jan. 4, 1931, p. 26.
³ "Big Boon to Massachusetts Textiles," The Boston Post, v. 529, no. 14, Oct. 16, 1930, p. 1.
⁴ Ibid., p. 1.
⁵ "Mills Approve Dropping Women from Night Work," The Christian Science Monitor, v. 23, no. 30, Mar. 2, 1931, p. 1.

because the women will not be replaced by men since they are better fitted for spinning.¹ The women in the Southern mills are much opposed to the measure because those formerly engaged in night work are now out of employment.²

Other encouraging factors are: low-priced raw material which makes unlikely any inventory losses for the coming year; more efficient methods of production adopted by the leading mills; the replacement of obsolete equipment; and the elimination of inefficient employees and unnecessary administrative officials. Better methods of distribution are being worked out and used to improve sales.³ Many mills have gone out of business in the last few years, thus reducing the productive capacity of the industry, and curtailment of production has reduced surplus stocks.⁴

The industry is beginning 1931 in a stronger condition than it has enjoyed for years.⁵ At the

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- ¹ Hines, W. D., "Night Work Elimination Will Aid to Stabilize Employment," New Bedford Sunday Standard, Dec. 7, 1930, p. 19.
 - ² "Dropping of Women from Mills Opposed," The Christian Science Monitor, v. 23, no. 80, Mar. 2, 1931, p. 3.
 - ³ Talmage, A. A., "Cooperation Aids Textile Outlook for Coming Year," New Bedford Sunday Standard, Jan. 4, 1931, p. 26.
 - ⁴ McDevitt, F. H., "Year's Outlook is Favorable," New Bedford Sunday Standard, Jan. 4, 1931, p. 26.
 - ⁵ "Prosperity for New England Industries in Future a Surety," Salem Evening News, Nov. 15, 1930, p. 5.

present time, the general industrial depression is affecting the mills more than conditions within the industry itself.¹

¹ McDevitt, F. H., "Year's Outlook is Favorable," The New Bedford Sunday Standard, Jan. 4, 1931, p. 26.



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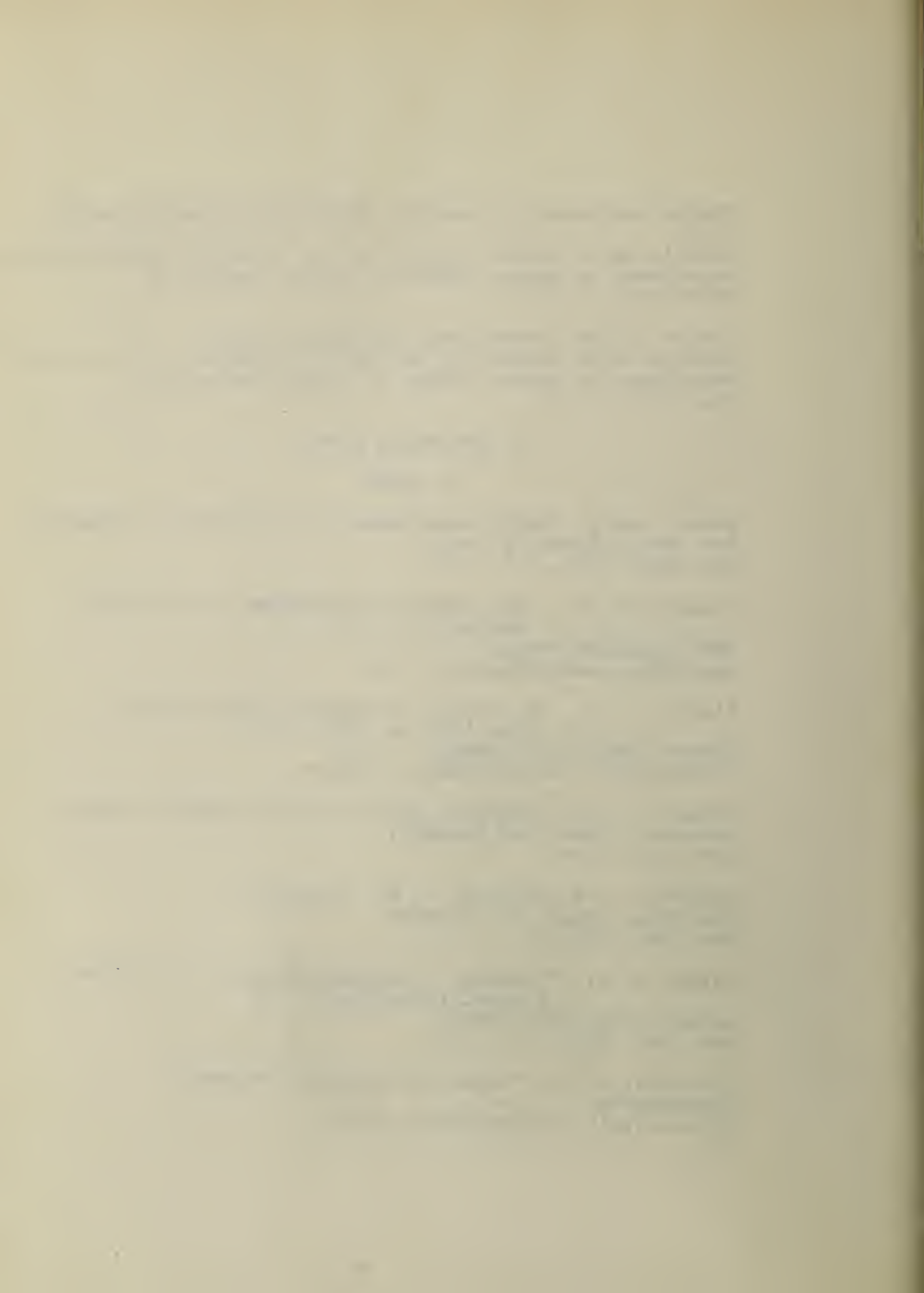
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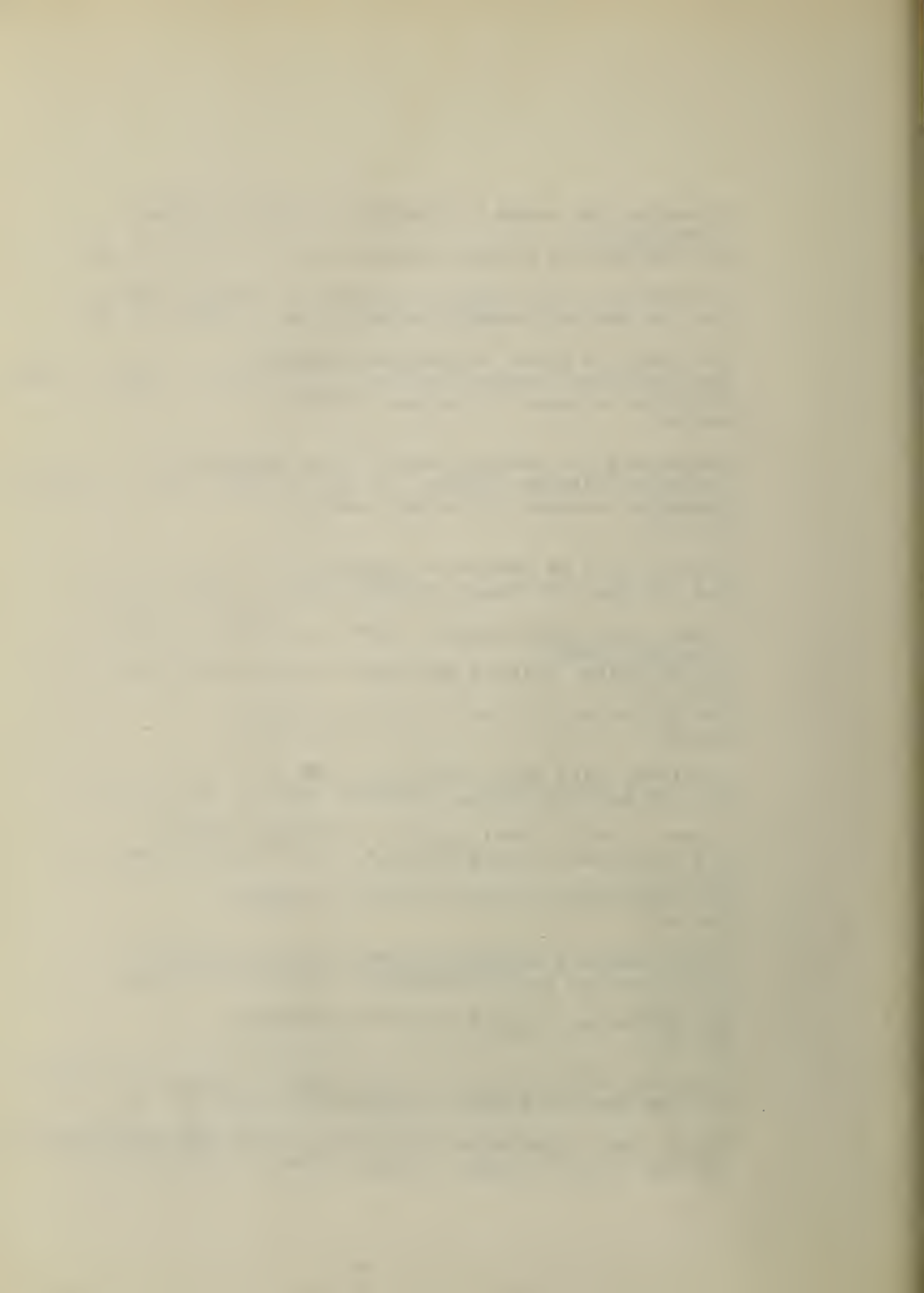
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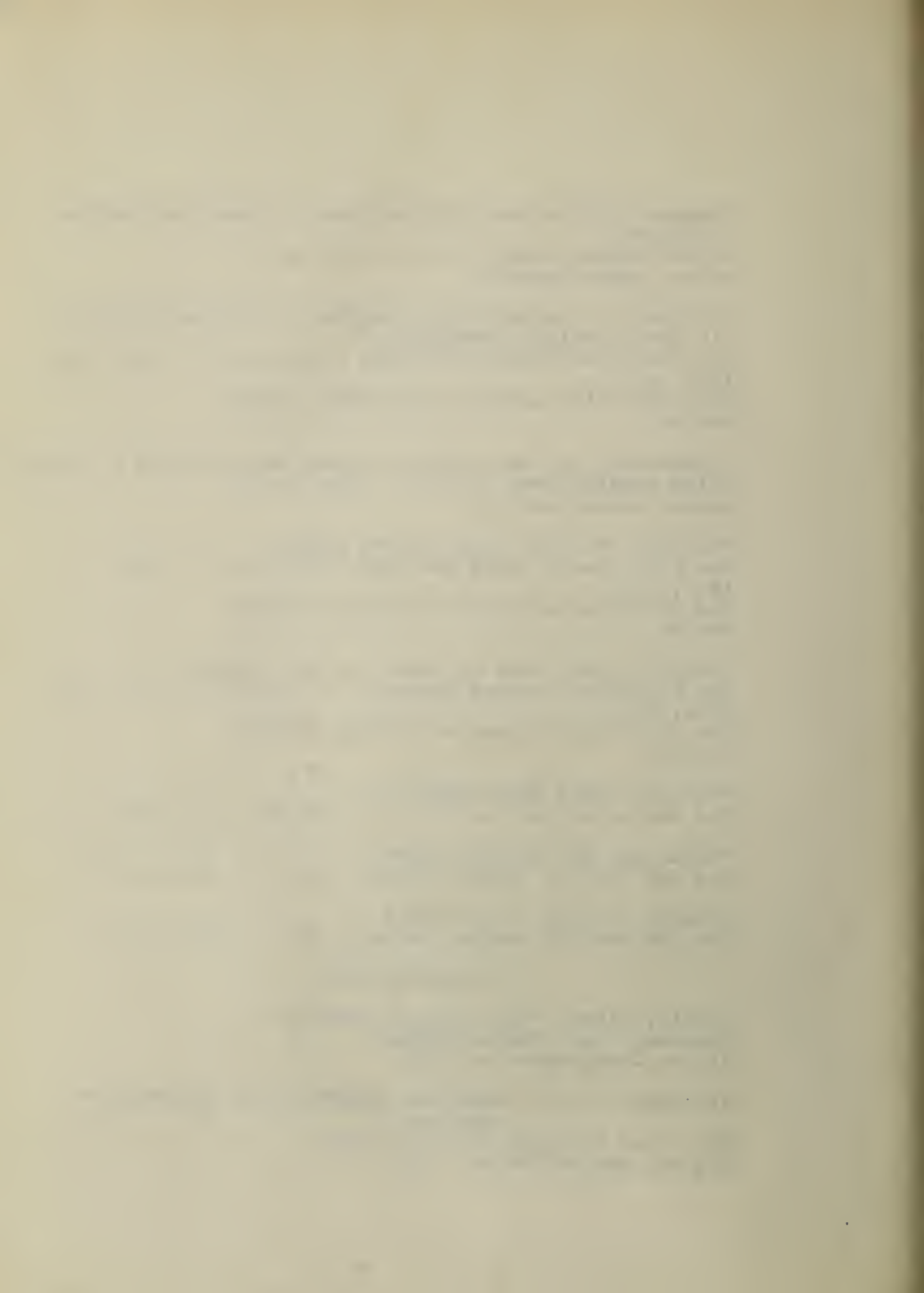
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